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SEPTEMBER 1920.

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The Mysore Economic Journal

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WHERE WE MUST NOT ECONOMISE.

BY B. SEEBOHM ROWNTREE,

Author of *Land and Labour, etc.*

WHEN a business is passing through a period of acute strain and financial stress, a period so critical that its managers cannot afford to make even trivial blunders, a wise firm will do its utmost to eliminate all waste. The management will ruthlessly scrap all effete or slipshod methods, and organize the enterprise with a view to utilizing every ounce of raw material, every hour of the working day, and every fraction of human effort. The slightest leakage will be detected, and promptly remedied, while much expenditure which might have been permissible in prosperous times will be tabooed.

And yet, the more prudent the members of the management, the less they will be tempted to cut down any expenditure that is essential to the life and soul of the business, and to its industrial future. They will scrap no improvement (such as the introduction of a costing system, or the appointment at a high salary of a first-rate chemist) which more than pays its way in increased business efficiency. In short, they will discriminate unerringly between wise though ample outlay, and extravagance or waste.

Now, the State is really a giant firm, which runs a wonderfully vast and complicated business, and which must adjust its outlook, not only to the needs of the community to-day, but to needs which will arise twenty years hence. Therefore, like the business management, in this period of acute national stress, it will drastically check all waste. But it will never fail to distinguish clearly between a wasteful policy, and one of liberal, but judicious expenditure. From the national standpoint, all economies should be condemned which, although they reduce or check expenditure in some directions, do this by methods which handicap the community as a whole, and militate against its mental, physical, or moral welfare. Let us consider some of these false economies.

First of all we must taboo any policy which penalises education. Our motto with regard to education should be: Look after the nation's brain-power, and the nation's wealth will look after itself."

POWER IN THE HANDS OF THE WORKERS.

There are grave reasons why progressive and generous methods should be adopted in this connection. The workers are taking more power into their own hands, day by day, not only in the world of politics but that of industry. The phrase "Government by the people, of the people, for the people" will soon be transferred from the realm of vague ideals into the welter of practical life, with its infinite complexities, and its world-wide entanglements. Now, will it represent the government by intelligent people of other intelligent people, for their mutual benefit? Or will the blind lead the blind,

as they have so often done in the past? The answer to that question depends upon the equipment which the workers are receiving to-day. Are they, or are they not, learning to use power wisely? Are they acquiring a mental training which will at least enable them to choose leaders who are leaders indeed? Again, are they gaining a historical perspective, and some knowledge of the evolution and structure of present-day industry and economics? It is of supreme importance that masters should be acquainted, for example, with the enthralling, and often tragic, history of the Trade Union movement. But it is no less important that the men should learn to see in the masters beings, who, like themselves, are largely in the grip of circumstances over which they have but a faint shadow of control. The gulf between conflicting interests and prejudices can only be bridged by the comprehension that comes from wide knowledge and ideals that transcend the individual or the group.

In the second place, we must not economise by unduly restricting our provisions for the economic security of the workers. There are many reasons for refusing to adopt a cheeseparing policy in this connection. I will only criticise it from the standpoint of productivity. The need to increase our national output is imperative in the last degree, and the effect upon output of a widespread sense of insecurity in the ranks of labour is disastrous. So long as workers are liable to be flung out of work without adequate resources for their own maintenance or that of their dependants, so long will the ca' canny policy find millions of adherents. In this connection, I may say that the provisions of the present Unemployment Act are quite inadequate. We need a scheme more radical and more far-reaching before we can cope with the "menace of unemployment."

FOUR EXPENSIVE ECONOMIES.

In the third place, we must shun all measures which would affect the efficiency of the workers adversely. I may mention four spheres in which the results of a false economy are especially harmful.

(a) Housing.

(b) Wages.

(c) Medical and hygienic provisions.

(d) Temperance reform.

(a) Some people say that "we cannot afford to build good houses for the workers." My answer is that far less can we afford to leave them without houses much longer, or to build them bad ones. There are far too many thousands of bad houses already, houses which, even if not technically insanitary, are inadequate from the mere standpoint of physical requirements. In the future, the house of the rank and file worker must be sunnier and more spacious, more convenient in every way, and better suited to his growing mental and social requirements. If possible, it must have a garden. Space forbids me to say half I should like to say on this point. But a garden is not only a storehouse of fresh fruit and vegetables. It is Dame Nature's sanatorium, her rest-home for the jaded worker, and her unfailing "counter attraction" to allurements more costly, but less sane.

Of course, in connection with houseing, here are great possibilities of wise economy. We can economise, for instance, by putting an end to profiteering, whether among those who supply raw materials or those who build —masters or men.

(b) I will not dwell on the evil results of economies which involve a rate of wages below the figure necessary to maintain the workers in physical efficiency. From the national point of view, such "economies" only mean that outlay in the right direction is being diminished at the cost of a vastly increased outlay in the wrong direction. We are as it were, robbing Peter of sixpence to pay Paul a bad penny. An inadequate scale of wages means a heavier burden on

and shortage of national output. It means a high rate of infantile mortality. It means parish relief, or the workhouse, for many thousands of men and women who should be self-supporting in any wisely ordered community.

THE HEALTH OF THE NATION.

(c) We must not make economy our watch-word in connection with preventive and remedial measures destined to safeguard the national health. When, as a community, we promote the actual vigour and fitness of human lives, whether we establish cliuics, or sanatoria, or provide maternity benefit, or Infant Welfare Centres, we are, in effect, buying "Health Bonds." And that bed-rock investment ensures all our other investment.

(d) I believe that our present hesitation to put the liquor traffic under national control arises very largely from the prevalent false perspective in the matter of economy. Some people say that any scheme of State Purchase is "economically unsound." It is true that such people seldom approach the problem with academic calm. It is also pretty certain that they have not thought out its pros and cons, nor studied, for example, the famous Carlisle experiment. But, do they consider that the present system, which actually puts a premium on the vice, disease, and suffering that are inseparable from the excessive consumption of alcohol, is economically sound? Any policy that tends to sap, not only the physical, but the moral fibre of a nation—however lucrative it may seem—is economically indefensible, and any policy that raises the general level of efficiency and integrity is "economically sound," although it may involve some slight initial risk, or even loss.

Finally, with regard to every proposed economy, or to any proposed expenditure, we should, I think, honestly ask ourselves the following questions:

"Will the policy in question, viewed from the standpoint of the whole community, and over a number of years, enrich human life, or impoverish and waste it? Will it help us and those who come after us to build up a better world—a world of justice, comradeship, and high achievement? Or will it mortgage the nation's future to serve the private ends of a group, or a party, to-day?"

AGRICULTURE IN MYSORE, 1918-19.

BY "RUSTICUS."

WE cannot but think that the Report of the Mysore Agricultural Department, interesting as it is, would be even more so, especially to readers outside the Mysore State, if it were a little less disconnected. We could wish that its 177 sections had been reduced to about one-third that number. This, however, is a minor blemish and we consider that the Agricultural Department is to be congratulated on the excellent year's work it accomplished in spite of the discouragement of the influenza epidemic and the unfavourable season. It should perhaps be mentioned that, although the Report was written by Dr. Coleman, he was absent on well-earned leave during the greater part of the year, Mr. H. V, Krishnayya officiating for him.

The outstanding feature of the year's work was work which had not previously fallen to the lot of the Department, the distribution of seed grain on a large scale. The monsoon of 1918 was a great disappointment all over India and heroic measures were necessary to meet the situation. The object of the Agricultural Department was to secure a rapid increase in the stock of food grains by the growth of short duration crops with the assistance of the supplies of water, limited though they were, which the late rains of 1918 had brought and of an intermediate food crop in channel areas before the main paddy crop. The work was subsequently extended to the distribution of seed grains for the sowings in the main agricultural season of last year as it was found that supplies obtainable in the ordinary way were in serious defect. Dr. Coleman estimates that the result was sixty thousand pallas of grain worth Rs. 6 lakhs and nine thousand tons of fodder worth Rs. 2½ lakhs. He considers

that, of this total of Rs. 8¼ lakhs, 75 per cent or Rs. 610,000 may be credited to the special efforts of his Department. The claim is a reasonable one for it is clear that the crops for which the seed was originally distributed would not have been grown at all but for the activities of the Department and that a large area would not have been cultivated in 1919 had it not supplied the seed.

The recent visit of the Indian Sugar Committee to Mysore lends special interest to the work of the Department on sugar-cane. The Committee must have found their visit to the Hebbal farm an instructive one for they saw there what can be done in India, given the right varieties of cane under proper cultivation. Red Mauritius, which, as in previous years, headed the list in the varietal tests, gave a yield of 392 maunds of jaggery. The maund is, we presume, the usual Mysore maund of 28 pounds so that this represents a yield of nearly 5 tons of jaggery per acre. The average yield of jaggery for all India is, we believe, somewhere in the neighbourhood of a ton an acre! But even better results than this can be secured by the application of the right amount of manure. When three tons of honge cake were applied, the yield amounted to 455 mands. With three tons of castor cake, it reached 468 maunds. Castor cake is, however, more expensive than honge cake and the net value of the jaggery in the two cases only differed by a rupee, the figures being Rs. 844 and Rs. 843 respectively. The work of the Department in demonstrating the profitableness of the cane crop did not end there. Its experiments showed that the heaviest yield was obtained when the rows of cane were four feet apart and not two or three feet apart as the ryot prefers them. The saving of sets—a heavy item in cane cultivation—resulting from the wider spacing will be obvious. Hebbal is not content with testing varieties of cane obtained from abroad or from other parts of India against the local varieties. It is breeding its own canes and ten of its seedlings appeared better than the Red Mauritius variety. These are being tested on the other farms and three of them,—H. M. 315, H. M. 14 and H. M. 303—we give their labels so that our readers may follow their history in future years—have done well both at Marthur and Babbur. At the latter farm, as at Hebbal, in the ordinary tests, Red Mauritius proved the heaviest yielder and gave 23·50 tons of cane to the acre over 6½ acres against 10·16 tons of the local variety, Rasthali, on the same area. The farm at Nagenahalli which is intended for cane is still unable to grow that crop owing to irrigation difficulties but it is hoped to make a beginning this year. Work on the farms is, of course, of little use unless its results are visible in the districts and it is satisfactory to find that Red Mauritius is now well established in all the important sugar-cane areas. Over 1,100,000 sets of it were distributed last year. This looks a formidable figure but we believe we are correct in saying that it is only sufficient for between 100 and 200 acres. An appreciable area must, however, have been planted with sets obtained by cultivators to whom the variety had been given out in previous years. Along with the spread of improved varieties and improved methods of collection, the Agricultural Department is promoting the spread of improved methods of extraction. The three roller Nahan mill is making rapid headway but unfortunately the supply was not equal to the demand and, even more unfortunately, the efforts of the Public Works Central Industrial Workshop to supplement it were unsuccessful, its mills proving so unsatisfactory that they had to be withdrawn.

A complaint which has frequently been made against the Agricultural Department in British India and is not without justification is that it has devoted its attention too exclusively to sugar-cane, wheat, cotton and rice and has left important crops such as jola (the juar of Northern India and the cholam of Madras) and ragi which figure largely in the dietary of large masses of the Indian

population almost entirely alone. That is not the case in Mysore where ragi is a crop on which much work has been done. The strain selected at Hebbal is now sufficiently fixed to justify trial and multiplication on a field scale. It was hoped that 200,000 seers of seed would be available for the season of 1919 but owing to the failure of the monsoon nothing was forthcoming from Dodballapur which was to have been the main source of supply. Where the strain had a chance, it did well and its uniform growth and well filled earheads presented a marked contrast with the local varieties. A great demand for seed has sprung up in the neighbourhood of Hebbal. This is not, as might be thought, due to the fact that the ryots are impressed by the excellence of the crops on the Hebbal farm. Nothing of the kind! One enterprising ryot tried the improved seed and the excellence of his field so impressed neighbours that they are anxious to follow his example. This is another illustration of the truism, which, however, it took the Agricultural Department all over India a long time to realize, that the ryot is the best demonstrator. Get hold of an intelligent ryot and persuade him to try improved varieties or improved methods and others will soon follow his example. Demonstration farms are necessary, as are books of reference, but the secret of success lies in demonstrating what can be done on the cultivators' own land under his conditions.

Of the other work on the farms it is unnecessary to say much, especially as progress was so hampered by the unfavourable agricultural conditions. Cambodia cotton is spreading as the result of the work at Babbur. Tried against the local variety, Doddabatti, it gave a disappointing yield, only 8½ maunds an acre against 21. It would have been interesting to know on what soil it was grown, black or red, as Madras experience is that on irrigated red soils, Cambodia gives about twice the yield of unirrigated land.

The demand for improved agricultural implements is growing apace all over India. Now that we are approaching, however slowly, conditions which may be regarded as normal in the post-war era, we hope it will not be long before the melancholy cry in all agricultural reports that the demand exceeds the supply will cease to be heard. The manufacture of such implements is a branch of activity to which Indian capitalists might well turn their attention. It would, we are convinced, prove more profitable and more beneficial to the country than many of the ventures on which they have recently embarked. There is no reason whatever why India should not be able to help herself to a far greater extent than she does at present. In all the circumstances, the Mysore Department did well to sell 1,038 ploughs and 62 cultivators during the year, in addition to 1,779 spare parts. The value of the implements sold was over Rs. 38,000.

It is interesting to speculate on the increase in the outturn of crops in India which might be secured by a judicious use of manures. It would, we have little doubt, solve the food problems which are pressing so hardly on the world at the present time. There is certainly no more important question before the Agricultural Department in India than this and the fringe of it has hardly been touched. The Mysore Department is doing what it can. About 6,000 seers of green manure seed, 14 tons of special mixture for paddy and 48 tons of oil cake were issued during the year. The oil was used mainly for the cane crop and it is mentioned in the Report that, whilst the price of oil cake has nearly doubled and the cost of mills, pans and labour has increased enormously, there has been no alteration in the price of jaggery. Matters have altered considerably in this respect since the Report was written but the cane cultivator would undoubtedly have reaped a richer financial harvest if his crop had been sold for conversion into sugar.

We are glad to see signs of closer co-operation between the Agricultural and Co-ope-

rative Departments. Nineteen co-operative societies were supplied during the year with implements, seeds and manures to the value of Rs. 1,541. This is a small amount but it represents a beginning and there is every reason to believe that the example of the nineteen societies will soon be followed by others, especially as the Registrar of Co-operative Societies has detailed an inspector solely for the work and the Agricultural Department has lent a fieldman to assist the societies.

The useful work which was done in the Chemical, Mycological and Entomological Sections was mainly a continuation of that of previous years. Both the two former sections were engaged in investigating the spike disease of sandal but it cannot be said that the investigation made great progress unless the discovery that spiked sandal leaves are deficient in nitrogen leads to anything. The Mycological Section is making good progress in stamping out the Koleroga disease of areca palms in spite of the handicap due to the difficulty of obtaining sprayers. If the Entomological Section succeeds, as it hopes, in perfecting the very simple remedy it has discovered against sugar-cane borer it will have done a most valuable piece of work, for borer is by no means confined to Mysore and is, in fact, the most serious pest of cane to be found in India. The work of the Botanical Section on cane and ragi has already been mentioned. This section is also doing good work on cotton and though its selection work on this crop is hardly likely to prove as fruitful as it has in the case of *karunganni* in Tinnevelly or 4 f. in the Punjab, it may lead to valuable results for, though cotton is hardly one of the important crops in Mysore, the area under it is by no means negligible. We are glad to see that it has been arranged to make a collection of the varieties of jola grown in the State and to study their characters. As we mentioned above, this is a crop which has been unduly neglected.

Influenza interfered seriously with the work of the two agricultural schools in Mysore, the Hebbal School and the Chikkanahalli Vernacular School. Only one of the thirteen students who sat for the final examination at Hebbal failed to pass. This is satisfactory enough but it is not so satisfactory that some of the students have fallen out by the way as they find residence on the farm too expensive. The Government review suggests that the value of the scholarships granted by the District and Taluk Committees, which are only from Rs. 3 to Rs. 10 per mensem, should be raised. Everything else has gone up in India and it is only reasonable that scholarships should be increased in proportion. Chickanahalli had only eleven students last year but that the work it is doing is appreciated is shown by the fact that there were over 100 applications for admission for 1919-20. The number of students for whom room was found was consequently increased to seventeen.

Dr. Coleman, as usual, gives an estimate, necessarily a very rough one, of the direct financial results of the work of the Department. He considers that the improved tillage implements sold during the year gave the agriculturists an increased yield, the value of which was Rs. 70,000 and the cultivation of improved strains of ragi Rs. 20,000. The application of oil cake must have meant an extra profit of Rs. 75,000 and the use of better seed, presumably cane seed is meant and better milling and boiling methods, another Rs. 13,000. The increase due to other work of a miscellaneous character such as the extension of single seedling transplantation of paddy, green manuring and distribution of seed for special crops such as cotton, ground nut, turmeric, etc., is placed at Rs. 15,000. The total for the usual work of the Department is thus Rs. 1,90,000. Add to this, the Rs. 6,10,000 claimed as the share of the Department in the results of the scheme for the increase of food production and we get a total of exactly Rs. 8 lakhs. The estimate is, in our opinion, a very conservative one. It is also as usual impossible to compare the value of the work done by the Department with the amount spent on it as the Report fails to give figures for the latter but that the Department paid for itself several times over we have no doubt, and, as Dr. Coleman truly says, the effect of its work is cumulative and does not disappear with every passing year.

SILK FILATURE FOR MYSORE.

BY N. RAMA RAO, B.A., B.L.,

Superintendent of Sericulture, Mysore.

THE area under mulberry in the Mysore State is about 45,000 acres, and the cocoon yield approximately 10,000,000 lbs, capable of being reeled into about 7,50,000 lbs. of silk, and giving a by-product of about 300,000 lbs. of silk waste. Taking the present value of silk at Rs. 14 a pound and of waste at 12 annas, the value of the silk product of the State is considerably over a crore of rupees, and the industry in its several branches involves the welfare of over a lakh and a half of people.

The State enjoys special advantages for silk production in its climate and internal economy, and the industry if fostered, is sure to grow to several times its present size. The world's demand for silk is fast outgrowing its supply, and prosperity is assured to the country which can produce this valuable article on a large scale. Our industry is handicapped by two great drawbacks—a bad organization which deprives the rearers of their just share of profit, and a poor and limited market, which deprives the country of its place among the silk producers of the world.

I shall not touch on the problems of seed supply and improvement of rearing technique which are being grappled with by the Department. I shall refer to the economic weakness of the rearer only to say that it places him at the mercy of petty money-lenders, and fetters his freedom of sale, and to premise that his efficiency as a producer would be greatly increased if he were assured of an open market, and fair dealing.

The only way of vindicating our claim to profit by the world's growing demand for silk, and of rescuing the workers from the tyranny of usurers is to establish a filature. The establishment of a filature is, therefore, lifted from a mere matter of private gain into one of high national importance.

Experiments have proved that rather more than 40 per cent of an average cocoon crop can be made into the finest silk, and that the remainder, if separated from specially bad cocoons (which amount to about 10 per cent), can be made into silk much superior to the bulk of the article now produced. This involves sorting—which is never done at present. Good, bad and indifferent cocoons are confounded together into a very inferior silk, quite unfit for use with machinery. Tests of Mysore silk, in France disclosed how material of excellent natural quality is being ruined by bad reeling. Even in our traditional markets, our expensive and ill reeled silk is being rudely hustled by a low grade Chinese article, which can afford to sell cheap, because much of the profit has already been made by the better grades.

There is no doubt that Mysore deprives itself at present of at least Rs. 3 for every pound of silk it sells.

There is yet another and even more important aspect of the question. The reeler, who is the rearer's market, makes no difference between good and bad cocoons in reeling *and therefore in price*. This deprives the rearer of all incentive to improve the quality of his crop. A filature, with buying agencies distributed over the silk area, would alter all this; it would organize the rearers in the villages into Co-operative Associations for production and sale, as this would be the most convenient way of dealing with them. Such associations would be most potent factors for progress, and industrial development.

The quantity of cocoons produced in the State at present is sufficient to keep about 2,500 basins at work throughout the year.

Making every allowance for the development of cottage reeling, and the continuance of the indigenous method for meeting local demand, there can be no doubt about the immediate scope for the establishment of filatures: and it must also be borne in mind that sericulture is growing very rapidly. In course of time there will probably be large filatures at Chikballapur, Bangalore, Channapatna, and T. Narasipur.

Just now a filature with 96 basins—consisting of 4 units of 24 basins—would be very suitable, as it would not be too large for a beginning, nor too small for being worked on a commercial scale. It is not meant that work should be started right off with these 96 basins; this size is only proposed as the most economical for initial installation. It would be best to begin with 10 basins, and expand to the full limit of the filature in a year, perfecting our technique, and organization at the same time. When all the 96 basins are at work, we might go on adding fresh units of 24 basins, till we have, say 240 basins, which is probably as much as a Superintendent can manage efficiently. The first filature, on whose successful working so much depends, might with advantage be located at Bangalore, where it can command the assistance of established industries and commercial organization.

The above statement of facts, constitutes, it is believed, a complete argument for the installation of filatures in Mysore. To summarise:—

Sericulture, for which we enjoy very great natural advantages, fills an important role in the economic life of the State, and affects the happiness and prosperity of a large section of our people. The demand for silk is steadily increasing throughout the world. Our organization is faulty both internally and externally; internally, because rearers and reelers work under conditions of great in-
[illegible] because our silk cannot get into the world's market. These defects not only confine the growth of the industry, but menace its very existence, by inviting aggressive, and to certain extent, successful competition from foreign countries. We have to improve not only to progress, but even to live. Such conditions would even justify a sacrifice, but the remedy proposed, far from involving a sacrifice is almost mathematically certain to bring a great, and ever growing addition to the national dividend. The establishment of filatures saves the economic loss due to making bad silk out of good cocoons, and by giving Mysore silk an unlimited market, secures to the Mysore agriculturist scope for developing his production to the full limit of his natural advantages. Immediately it rescues him from usurers, and gives him an interest in improving the quality of his production.

We are passing through an epoch of active industrial construction. It is hoped that the case for establishing filatures will receive the consideration its importance deserves from patriotic and enterprising men of business. They may like to know that investigations have been conducted to ascertain the type of plant suited for our raw material and labour conditions, and that valuable data have been collected and are available with the Sericultural department of the State.

INDIAN STUDENTS IN AUSTRALIA.

BY ALBERT J. SAUNDERS, M.A., F. R. ECON. S. (on Leave),

American College Madura, South India.

AT different times several of my students have asked me if Indian students may not go to Australia to complete their industrial or technical or university education. The argument they have advanced is a sound one and one very hard to answer. We may go, they have said, and are welcome to Europe, to England or Scotland, to America, but we may not go to Australia. In other words, we may go to the Mother of our British Empire, and be warmly welcomed by her as one of her children; but are refused a welcome to the home of one of the daughters. And yet we are all children or members of a common empire. In vain have I tried to explain the standard of living, the wages question, the labour situation which are bound up in the problem; there has nevertheless still remained the sense of discrimination and injustice with which I have always deeply sympathised. I have tried to reason to myself that there ought to be a distinction between the ordinary coolie whose advent in Australia would soon bring about a labour and wages problem, for the Australian could not compete in the labour market with the Indian, and the merchant and student whose sojourn in Australia would not upset the conditions of labour. International commerce and trade are growing between India and Australia, and it is only natural and right that Indian business houses and students should desire to send or go to Australia for their training for the sole purpose of developing trade relations between the two sister countries of the same great Empire. I wish to emphasise this point that I saw the injustice of the former white Australia policy in reference to merchants and students, and ardently wished for some distinction to be made between the working coolie and the Indian student.

Being on a short visit to Australia I resolved to investigate the matter with special reference to Indian students, and I now make this formal report on the matter which I trust will be given wide publicity by the Press throughout India.

I took the matter up first with certain professors and students of the Universities of Melbourne and Sydney. My question to them was—will you welcome Indian technical and university students to your schools and universities? The answer came again and again—certainly we will welcome them, and would be glad to have them. Then fully understanding that this question is a Government matter, for it has reference to Australia's foreign policy, I obtained an interview with the Victorian State Minister of Education and the Director of Education. We had a long talk about the whole matter. They said that it was the first time that the matter had been brought to their attention, and as educationalists they would welcome the admission of Indian students to Victorian technical schools and higher educational institutions. But after all, they said, it was really a matter for the Federal Government to decide, and accordingly I was sent to the Immigration Department of the Federal Government of Australia.

Unfortunately I did not see the Prime Minister who was absent from the State at the time, but I had the opportunity of a long conference with two heads of departments, and they supplied me with the former and more recently amended Government orders on this question. I shall now proceed to lay before you the Government papers on the admission of Indian students to Australian institutions.

I need not go into the whole history of this question, for it has been the subject of

much consideration and action extending over many years, and it has been the occasion of a great deal of correspondence which is all preserved in State papers. I will however report three Government actions taken which will bring the matter up-to-date, and show how the question stands to-day :

I

IMMIGRATION RESTRICTION ACT 1901.

Extract from the correspondence respecting the proposal to modify the administration of the Act in regard to visits of Asiatic merchants, travellers, etc.—

(Dated 16th April, 1904 to 1st Aug. 1905)

Prime Minister,

Melbourne, 15th August 1904.

MY LORD,

I have the honour, at the instance of my colleague, the Minister of State for External affairs, to inform Your Excellency that he has had under consideration the question of so administering the Immigration Restriction Act as to afford an opportunity for Indian merchants, students, and tourist travellers to enter the Commonwealth temporarily without being subjected to any restrictions.

2. Mr. Hughes has now decided that any persons bonafide of the classes mentioned above desirous of visiting Australia, will be admitted to the Commonwealth, provided they are in possession of passports from the Indian Government sufficiently identifying them, and specifying the purpose and probable duration of their visit. Such documents will be accepted by this Government as entitling the holders to freely enter and pass through Australia, the only condition being that the passports shall be examined at the first port of call.

3. On arrival in the Commonwealth the education test prescribed by the Immigration Restriction Act will in these cases not be imposed, and such persons will be permitted to land without restriction, but, in the event of their wishing to stay longer than twelve months, an application for a certificate of exemption for the desired term should be lodged before the expiry of such time, and the reason for such exemption stated. It must, of course, be understood that in any such cases none of the rights of the Government of the Commonwealth under the Immigration Restriction Act are to be considered as abandoned, and that, should it be found that this concession is being abused, the practice will be subject to review at any time.

4. An undertaking will be required from all such persons to advise the customs officer at the port of departure when they are about to leave the Commonwealth.

5. I shall be glad if Your Excellency will be so good as to communicate the contents of this Despatch to the Viceroy of India, and ask Lord Curzon to advise Your Excellency whether arrangements can be made in India accordingly. If there is no difficulty on this point, my collegue's proposals might take effect from an early date, say the 1st of October next. The Indian Government might take the necessary steps to give the requisite publicity to the matter at the seaports and principal towns of India.

6. It is hoped that this exemption will be the means of promoting intercourse and improving trade relations between the Commonwealth and the great Indian Empire.

I have, etc.

(Signed) J. C. WATSON.

His Excellency the Governer-General;

Commonwealth of Australia.

II.

Extract from Resolutions at the Imperial War Conference 1918 respecting reciprocity of treatment between India and the Dominions.

"1. It is an inherent junction of the government of the several committees of the British Commonwealth, including India, that each should enjoy complete control of the composition of its own population by

means of restrictions on immigration from any of the other communities.

"2. British citizens domiciled in any British country, including India, should be admitted into any other British country for visits, for the purpose of pleasure or commerce, including temporary residence for the purpose of education. The conditions of such visits should be regulated on the principle of reciprocity as follows :—

(a) The right of the Government of India is recognized to enact laws which shall have the effect of subjecting British citizens domiciled in any other British country to the same conditions in visiting India as those imposed on Indians desiring to visit such country.

(b) Such right of visit or temporary residence shall, in each individual case, be embodied in a passport or written permit issued by the country of domicile and subject to vise there by an officer appointed by and acting on behalf of the country to be visited, if such country so desires.

(c) Such right shall not extend to a visit or temporary residence for labour purposes or to permanent settlement."

III.

Extract from a letter from the Prime Minister to the Governor-General, for transmission to the Secretary of State for the Colonies.

Dated 10th April 1919.

"With reference to the Secretary of State's letter of the 28th August, 1918, Dominions No. 476, I desire to inform Your Excellency that the documents transmitted have been considered, and ministers have had the advantage also of perusing the report of the conference dealing fully with the question of reciprocity of treatment between India and the Dominions.

"As far as Australia is concerned the position is that in 1904 the Commonwealth Government agreed to permit the admission of Indian merchants, students or tourists with their wives on passport for a period of one year, the question of subsequent stay to be considered on application.

In view of the resolution, and with the desire to give full effect to the spirit which animated the conference, the Government is now prepared to extend the former arrangement so as to permit Indian merchants, students and tourists to be admitted to Australia on passports, and to remain here (Australia) indefinetely without the need for further application, so long as they preserve the capacity in respect of which the passport was issued."

This in brief outline is the position as it stands to-day in reference to Indians, going to and remaining in Australia. Merchants, and by that term the Australian Government means not bazaarmen or small shop-keepers, but large traders and wholesale business men; students, including industrial and technical, college and university men, who wish to complete their education in Australia; and tourists may all freely go to Australia on a passport issued by the Indian Government and remain in Australia as long as they desire to provided only that they preserve the capacity (merchant, student or tourist) in respect of which the passport was issued to them.

This opens an unique opportunity to two classes especially of Indian men—merchants and students. It is only natural that Indian exporting business houses would desire their representatives in Australia, or those whom they wish to send as their representatives, trained in Australia. By that means they will get to know the country, the people, and the methods of Australian business. Then Australia offers a splendid opportunity for young Indian men to complete their education or technical training in the schools and colleges of a young and progressive country. The two outstanding advantages are—nearness to India, and consquently a saving in travel expenses; and a mild and delightful climate.

As time goes on it is hoped that many young men of India, either as merchants or students, will find their way to Australia, and thus help to bind together by means of commerce and education these two sections of the great British Empire.

BRITISH WAR ADMINISTRATION—A REVIEW.*

BY N. MADHAVA RAO, B.A., B.L.

THE late world conflict has shown, in a most striking manner, that wars in these days are not won by valour alone. To raise and equip huge armies, on the scale witnessed in the war, was not merely a question of recruiting or training, but one which involved numerous and possibly permanent adjustments in the social economy of the nations concerned. This aspect of the war is the subject of a series of studies undertaken at the instance of the Carnegie Endowment for International Peace. The volume before us deals with British war administration and is written by Dr. A. Fairlie, professor of Political Science, University of Illinois, the author of some well known books on American Administration.

THE PARLIAMENTARY SYSTEM.

From the beginning it was recognised on all sides that fundamental changes in the Parliamentary system of Government were inevitable, if military operations were to be vigorously and successfully prosecuted. But few could foresee at the time (and few understand fully even at the present day) the magnitude of the constitutional changes that were coming.

The patriotic resolve of the Unionists early in the war to suspend party hostilities involved the disappearance of the official opposition and the abandonment of the party system of Government, which had dominated the political arrangements of the country ever since 1832. This change in the constitution of Parliament was accompanied by an equally remarkble change in its relation to the Executive. The exigencies of the war put an end to the constitutional fiction that the Cabinet is controlled by Parliament. It is true that there has been a large increase in the volume of legislation but the action of Parliament has been substantially that of passing the measures presented by the Executive Government, conferring with little or no hesitation, the enormous powers asked. Indeed the principal criticism made of the Cabinet, up to the end of 1916, was of its hesitation and delay in asking for legislative authority. In one important case, when the proposal for the second compulsory military service bill was first presented, the dissatisfaction in Parliament with its limited scope led to its withdrawal and the presentation of a more sweeping measure.

The free hand given to the Executive Government in regard to financial matters is even more remarkable. On August 6, 1914, a vote of credit for £100,000,000 was passed authorising expenditure for any war purpose, without specification or estimate, and this precedent was throughout followed during the war. The sums voted were as follows:—

1914—15	...	£ 362,000,000
1915—16	...	£ 1,420,000,000
1916—17	...	£ 2,010,000,000
1917—18	...	£ 2,450,000,000

It may be said without exaggeration that the Executive Government was given a blank cheque on the national purse.

Another significant instance of the control of the Cabinet over the Proceedings of the Parliament (the relation having been reversed) is furnished by a proposal made in February 1915, that the whole time of the House of Commons should be taken for Government measures until further notice—an extraordinary proposal which was accepted as a matter of course.

THE EXECUTIVE GOVERNMENT.

The Executive Government to which these powers were committed, it must be noted,

**British War Administration.*—By John A. Fairlie, Professor of Political Science, University of Illinois. Being No. 8 of the Preliminary Economic Studies of the War issued by the Carnegie Endowment for International Peace. Oxford University Press, New York.

was a radically different organization during the later years of the war from what it had been before. In the first place it was a Coalition which was more thoroughgoing than any known in history, including the prominent politicians of all the important parties, representing nearly 90 per cent of the House of Commons. Secondly the Executive included not only the political leaders but persons who belonged to no political party. The appointment of Lord Kitchener as Secretary of State for War involved a departure from established customs in two respects—in admitting to the Cabinet a non-party member and in placing a military officer at the head of the War Office. This principle of appointing 'experts' without party affiliations was greatly developed during the ministry of Llyod George, when men like Sir Eric Geddes and Mr. H. A. L. Fisher were placed in charge of the important executive departments.

But the most important change remains yet to be noticed. The Cabinet had hitherto been composed of some 20 members in responsible charge of different departments of the public administration. Early in the war it was recognised that "a body of 23 members of very unequal ability, tired by their departmental labors and meeting every few days for a couple of hours was indeed an impossible machinery for making war." The necessities of the times inevitably led to the formation of an Inner Cabinet to which, by common consent of the Cabinet, were delegated question of state and questions of strategy. In practice the Cabinet automatically ratified the decisions of the committee.

In the new Ministry of Lloyd George the traditional Cabinet of departmental heads taking a leading first in Parliamentary proceedings disappeared altogether. The Cabinet consisted of only five members who rarely attended Parliament and held no important portfolios. Relieved from the duties of detailed administration and from Parliamentary drudgery, the members of this small Cabinet were enabled to give undivided attention to questions of policy and the direction of war measures.

Though the cabinet was thus reduced to the smallest size, the *Ministry* composed of the heads of Departments was greatly enlarged and consisted of a total of 88, nearly double the previous Ministries. The new Ministry included a Minister of Munitions, a Minister of Labor, a Food Controller, a Shipping Controller, Ministers of National Service and Reconstruction. These Ministers, freed from considering general questions of policy were expected to devote their time to the administrative duties of their respective offices, and, as stated already, some of them were men of business or experts rather than politicians.

Another constitutional development of first importance was the formation of what was called the Imperial Cabinet to which representatives from Colonies and India were admitted. This Cabinet, which is to meet annually as well as when occasion demands, may prove the nucleus of the constitution of an Imperial Commonwealth.

These constitutional changes, which more than one writer has called revolutionary, have been summed up by Mr. Sidney Low:—

"For the ministerial and administrative "Cabinet collectively responsible to Parliament, officered and recruited entirely from "the Parliamentary circle, intimately related "to the House of Commons, framed on rigid "party lines, and conferring with absolute "secrecy, we have a Cabinet which is "not a Ministry and a Ministry which "is not a Cabinet; a Cabinet which "directs but does not administer; a "Ministry which has exchanged collective "responsibility for individual responsibility; "a Cabinet which has a very loose conception of the House of Commons, and for "some purposes is virtually independent of "it; which stands outside our party divisions;

"which admits to its confidential delibera- "tions representatives of all the great States "of the Empire as well as those of the Uni- "ted Kingdom; and which still holds private, "but no longer in the strictest sense secret "meetings."

"Like most revolutions it is really the "result of a long process of evolution. . . "The *Inner Cabinet had long existed* "in more or less unacknowledged form. Mr. "Asquith regularised, the Inner Cabinet, and "he made a step towards abolishing the "secret conclave by providing this commit- "tee with a Secretary."

"Parliamentary control had presisted in "form, but had been sensibly relaxed. The "war which conferred quasi-autocratic autho- "rity on the executive diminished it still "further; and the formation of the Coalition "reduced it to a shadow. This also went "far to release the Cabinet from the party "system and paved the way for a Govern- "*ment in which that system is ignored.*"

THE NAVY.

These varied changes in the political constitution were accompanied by equally important changes in the working of the Executive Departments. The Naval administration has perhaps been least affected by these changes. At the outbreak of the war, the British Navy was the largest in the world and was in a high state of preparedness and though there has been a large expansion of Naval strength, no radical reconstruction of the machinery of naval re-organization has been found necessary. Mention must however be made of the constitution of a Naval Staff and the formation of a Board of Inventions and Research "to concentrate expert scientific enquiry on certain definite problems, the solution of which is of importance to the Naval Service."

THE ARMY.

Unlike the Navy, the British army was a small volunteer force of some 900,000 in all branches, of which about 100,000 were available for immediate service. To increase this to a strength of more than 6 millions was a stupendous task which was only rendered possible by the general adoption of a policy of conscription. At first recruiting was conducted under the direct supervision of the War Office but in October 1915, the recruiting service was reorganized and placed in charge of civilians with the Earl of Derby as Director. Finally, in the latter part of 1917, recruiting was transferred to the Ministry of National Service. Local Recruiting Officers were appointed and Tribunals to deal with claims for exemption were set up throughout the country.

Though relieved of recruiting work and later on of the supply of Munitions, the War Office was found too highly centralised an agency for the purpose of the war. The Secretary of State for War combining in himself both political and military power, occupied a false and impossible position. With the reconstruction of the Imperial General Staff in 1915, the Chief of the Staff was empowered to issue orders in regard to military operations, and this delegation of responsibility left the Secretary of State to be the political but not military head of the Army Department. But even this arrangement was not altogether satisfactory as the relation of the Chief of the Staff to the Commander of the Army in France was not clear. The constitution of a joint allied Staff involved further difficulties. But, for the time being, the defects of organization were not clearly evident as the complete centralisation of the Military command of the allied armies under General Foch ensured unity of direction and eventual success. In October 1916, it was remarked by one writer "There seems to be no appearance of finality in an organization which the highest interests of the State require to be securely fixed on a sound basis for peace and war, and which should proceed uninterruptedly with its all important functions undisturbed by changes and chances of a nature to destroy the continuity and therefore the efficiency of

its work." It does not appear that a stable reorganization was secured even when the war had come to a close.

THE MINISTRY OF MUNITIONS.

The magnitude of the military operations and the development of new devices, materials, methods of warfare vastly increased the problem of supplying the combatant forces with the fighting equipment. After a variety of temporary experiments, *e.g.*, the appointment of committees, had been tried, a new Government Department of the first rank was established under the Minister of Munitions to deal with the supply of arms and munitions. By the end of May 1917, there were 143 Government Factories and 20,000 private controlled establishments with a total of more than 2 million work people. Besides the head quarters staff consisting of 12,190 employees, the Ministry had local offices throughout the country to supervise the manufacture of munitions in National Factories and to arrange for their manufacture in controlled private establishments on a Co-operative scheme. The work of the Ministry included much more than the provision of arms andammunitions. Every machine tool maker was brought under its control. The supply of motor transport, agricultural implements, areoplanes and seaplanes were also transferred to this Department.—In providing house accommodation for munition workers, whole villages were built by the Ministry and large subventions made to local authorities.—Thousands of skilled workers were withdrawn from the army and transferred to where they could be of most service. Skilled labor was diluted with unskilled and the employment of women developed to a remarkable extent, so that in certain branches of munitions work 60 to 80 per cent were women. Much was also done in regard to regulation of wages, hours of labor and conditions of employment. The profits of employers in the munition trades were restricted to one-fifth above the standard amount for the two financial years before the war. The operations of the Munitions Department involved, in short, a more far reaching Government control of industry than had ever been tried before.

CONTROL OF TRANSPORT, INDUSTRY AND TRADE.

As soon as war was declared, the entire railway system in Great Britain—a total length of some 20,000 miles—was brought under Government control, which was exercised through a committee of Railway Officials representing the several companies. The railways in Ireland passed under Government control in January 1917. More then 2,000 miles of inland canals were similarly taken over and their management vested in a Canal Control Committee.

A Shipping Ministry was constituted to secure efficient organization of shipping facilities. The duty of the Minister, who was known as Shipping Controller, was "to control and regulate any shipping available for the needs of the country in such manner as to make the best use thereof and to take such steps as he thinks best for providiug an efficient supply of shipping." Changes were made in the loading rules permitting an increase from 106 to 150 tons for each ton of registered shipping and a vigorous programme of merchant shipbuilding was carried out.

With regard to enemy trading, after various tentative attempts had been made to regulate exports and imports by means of committees, a war trade Department was constituted to deal with applications for export licenses. An Imports Restriction Department was organized in March 1916, under Mr. R. E. Enthoven, a Bombay Civilian.

A Government scheme of insurance against war risks was adopted and a committee to administer the scheme was appointed with two sections dealing respectively with Marine insurance and insurance on account of aircraft and bombardment.

During the year 1917, the patroleum industry was brought fully under Government control.

The supply of coal demanded unremitting attention. It was necessary to see that the labor requirements of the Mines were not affected by Military recruitment and that the cost of the production of coal was not exorbitant. Colliery recruiting Courts were, therefore, constituted and enlistment for the army was restricted to about 30 per cent of the miners. In November 1916, the Government took over the South Wales Coal Mines.

FOOD CONTROL.

The present war witnessed a vast expansion of Government regulation of food supplies, far beyond that of any previous time. Restricting export of food stuffs, and encouraging import by removal of duties were not unknown even in the Elizabethan wars. Most of these measures were repeated during the present war and in addition many other steps were taken including Government purchase and direct control of important articles of food, the passing of numerous sumptuary regulations and the fixing of prices. Many administrative agencies and advisory committees were appointed, and after a considerable period of uncertainty, and sometimes of conflict, between different agencies, a more centralised system of regulation was organized under a new Minister of Food control.

Arrangements were made in 1915 for the purchase of wheat in the Indian market. In 1916, by agreement with the French and Italian Governments, a joint International Committee was organized for the purchase of wheat flour and maize for the three Governments. Large quantities of sugar were purchased by Governments, involving in one year an expenditure of £18,000,000. The appointment of the Food Controller in December 1916, was followed by a series of orders placing restrictions on the milling of wheat flour and at the end of April 1917, the Government took over all the flour mills in the United Kingdom. New orders were issued for fixing maximum prices and restricting the profits of the producers and dealers. The price of bread was kept down by a subsidy. Great Britain was divided into 16 divisions over each of which a commissioner was appointed and local committees were formed for the purpose of commandeering and re-distributing supplies. Compulsory rationing was introduced for sugar, wheat, and other commodities.

Criticism has been made of the policy of food administration that it tended to place foremost the fixing of prices and restricting of consumption and to subordinate to these considerations the maintenance of supplies. The control of prices appears to have led to reduction of amounts shipped by importers and it has been suggested that an extension of excess profits tax to intercept high profits might have been more successful than the detailed regulation of prices. Time and investigation have yet to show the soundness or otherwise of these views.

Meanwhile the stimulation of home supplies was by no means neglected, although this aspect of the Food question was dealt with not by the Food Ministry but by the Ministry of Agriculture, and between the two there was not co-ordination at all times. Early in the war proposals were made for the increase of corn production by guaranteeing minimum prices for wheat and oats but these proposals were not accepted. Later on, however, in April 1917, a corn production Bill was passed which provided for guaranteed minimum prices for wheat and oats for a period of 5 years, for minimum wages to agricultural laborers and for Government taking over land to secure better cultivation.

THE LIQUOR TRADE.

The exigencies of the war brought to the forefront the question of the regulation of liquor traffic. In June 1915, a central board of control was appointed with wide powers over the sale of liquor and licensed premises and any contravention of the board's orders were declared a summary offence under the Defence of the Realm Regulations. Hours

of sale were reduced from 16-20 to 4½-5½ hours a day, sales being prohibited before midday, during the afternoon and after nine or half past nine in the evenings. In several districts the control Board took over the retail traffic, suppressing private taverns and establishing Government shops under severe and generally successful restrictions. Some interesting statistics are given showing the results of the policy of the Board. The amount of spirits manufactured in 1916-17 was 25 per cent less than in 1913-14. Consumption of beer was reduced from 32,000,000 to 26,000,000 barrels and the maximum output for 1917-18 was further restricted to 14,000,000 barrels. The manufacture of spirits for human consumption was stopped in 1917. Convictions for drunkenness were reduced to one-fourth.

FINANCIAL ADMINISTRATION.

Financial problems arising out of the war, involved (1) a large expansion of the fiscal affairs of Government and (2) far reaching and novel measures for protecting the financial organization of the country against a complete break down. The large sums voted by Parliament have already been referred to. In order to raise these sums, public loans were raised on an unprecedent scale. The total gross indebtedness of Great Britain on February 16, 1918, has been estimated at £5,678,600,000 as compared with £710,500,000 on August 1, 1914, an increase of nearly 700 per cent while the greater part of the war Expenditure was thus met by means of loans, additional taxation was also developed to the largest extent possible. By gradual annual increases, the normal income tax in 1916-17 was raised to 25 per cent, the excess profits tax to 60 per cent (increased again to 80 per cent 8: 1917-17), and customs and excise duties were doubled and quadrupled. The total revenue for 1917-18 amounted to £707,234,000 as compared with £198,243,000 in 1913-14 an increase of over 350 per cent.

In regard to regulation of private transactions, a moratorium was declared on August 2, 1914, postponing payment for certain bills of exchange. When the moratorium was about to terminate an act was passed giving emergency powers to the courts to protect debtors from hardships arising from the war. More direct assistance was provided by the appointment in November 1914, of a committee to grant advances to British traders carrying on export business in foreign countries and the Colonies. On January 19, 1918, fresh issues of capital were made subject to the approval of the Treasury under the following conditions; new issues for undertakings in the United Kingdom to be allowed only when they are shown to be advisable in the national interests; those for undertakings in the British Empire Overseas, to be allowed only where urgent necessity and special circumstances exist and those for undertakings outside the British Empire, not to be allowed at all. The approval of the Treasury was required also to the issue of capital by municipalities and other public bodies for public purposes.

By an act passed in May 1916, the courts were given power to stay execution in proceedings for money due by men and officers in the British forces.

DEFENCE OF THE REALM REGULATIONS.

The Defence of the Realm regulations under which food control liquor control, etc., were operated demand special notice, not only for the intensive system of Policy Regulation which they set up but for the important changes introduced by them in the Judicial procedure. The regulations covered a wide variety of subjects, e.g., restriction of aliens; occupation of land and buildings control of food supplies; control of motor spirit; control of meetings, recreations, fairs and festivals; control of mines; control of canals; control of licensed premises and intoxicants; control of lights and sounds; control of movements of civil population;

munitions and war materials; banking and exchange transaction, etc. The original act authorised the trial of offenders against the regulation by Courtmartial, or in the case of minor offenders against the regulation by Courtmartial, or in the case of minor offences by courts of summary jurisdiction. Opposition was raised in the House of Lords by Lord Halsbury, Lord Parmoor and Viscount Bryce to thus authorising for the first time in more than two centres, a civilian to be sentenced to death without trial by jury. Though these objections did not prevail at first, an amending Act was introduced in March 1915, by which British Civilian subjects were given the right to claim a trial by jury except for offences tried by a court of summary jurisdiction. But it was provided that this right might be cancelled by proclamation in case of invasion or other emergency.

OTHER ADMINISTRATIVE AGENCIES.

As regards the numerous other administrative agencies and arrangements developed during the war period, it is not possible to do more than mention a few.

A Ministry was organized in December 1916, for the purpose of organizing and maintaining the supply of aircraft, but it would appear that the Ministry did not possess complete jurisdiction over the air service and its scope of work involved much overlapping with other Departments.

The arrangements made for censorship of the press fluctuated a great deal and no finality or pronounced success was reached even after the development of the press bureau.

Work in connection with Army and Navy pensions reached enormous proportions and after various endeavours to handle it through commitiees and with the help of voluntary funds, a Ministry of pensions was organized in December 1916.

War charities care of the wounded and care of enemy prisoners required a good deal of Government organization, which was supplemented, not always with the best results, by numerous volunteer agencies.

The Department of Education, remote as it may appear from the scope of war activities, was also seriously affected by the war. In order to promote recruitment, the enforcement of compulsory attendance at schools was suspended in March 1915. The use of school buildings for military purposes also restricted the course of education. The scheme of national education came under exhaustive examination, and an Act was passed in 1918, providing for compulsory whole time education to children up to the age of 14 years and compulsory part time education to those between 14 and 18.

A labour Ministry was created in December 1916 to deal with labour problems.

What has been called the Government's most ambitious attempt to keep up the essential industries of the country was the constitution of a National Service Department under a Minister of Parliamentary rank. The Department for a time had little work to do until recruitment was added to its operations.

Another novel Department was the Ministry of reconstruction which was organized into 6 branches—finance; shipping; labour and industrial organization; rural development; machinery of Government, health, education, housing; and internal transport. Numerous committees were appointed to deal with various problems but "while a good deal of preliminary work has been done, by these various agencies, there does not appear to have been worked out any comprehensive or consistent policy of reconstruction, nor any agreement as to definite principles on which such a policy should be based.

GENERAL.

The monograph before us, which has been summarised at this length, as far as possible in the author's own words, purports to be a

descriptive rather than a critical account of British war administration. But constructive suggestion is not wanting. The main point made out by the author is that too many independent agencies have been set up to deal with different questions and that there has been a lack of co-ordination. New departments, commissions and committees continued to be established until the total number reached 400. The Ministry itself was composed of 88 officials, 60 of whom sat in the House of Commons and 23 in the House of Lords. As was to be expected from this multiplicity of agencies, there was a lack of clear understanding and the steady pursuit of a definite policy. The Army and Navy lacked a common head and the evils of divided control were emphasised by the constitution of an Air Ministry of Munitions, independent of both Army and Navy.—The jurisdiction of the Food Controller and of the Board of Agriculture came frequently into conflict. The Minister of Labour and the Ministry of National Service had no clear and well defined duties to perform. The Reconstruction Committee practically abandoned its problems and the new Ministry of Reconstruction was generally ridiculed. In regard to financial administration there have been gross instances of laxity.

In spite of these and other similar defeats, British administration during the war period was really a marvel of efficiency. It was the nearest approach known in history to what is termed State Socialism. The agencies of production—land, labor and capital—came under state regulation. The means of transport—railways, canals and shipping—were the subject of Government control. State authority and supervision were extended over the entire trade of the country, both external and internal, wholesale and retail. The operations of Food control involved a minute regulation of consumption over the whole country. The multitudinous task thrown upon Government was discharged with a degree of success which far surpassed anything that could have been expected. This result, of course, could not have been obtained without the enlightened co-operation of the people as a whole. Hardships and suffering were cheerfully borne, and though there were grumblings and occasional insubordination, the record is one of the acceptance of high ideals and patriotic perception of national needs.

That pet theories and age-old doctrines should disappear in the solvent conditions of the war was of course foregone. The party system which was supposed to be the corner stone of democracy was given up without demur. British horror of conscription died hard but effectually. The theories of free trade and *laissez faire*, which had been undermined even before the war, were now reversed and a process of national regimentation was accepted as a matter of course.

How far these changes in the national institutions and outlook will survive the peculiar conditions which produced them is a highly interesting and important question. But speculation is premature. The monograph before us and other studies in the series purport only to present actual facts as a preliminary basis for more thorough investigation, to be underteken hereafter, of the effects of the war on economic and social life.

A Forestry Officer has recently been appointed by the Rhodesian Administration and is now conducting a preliminary survey of the timber resources of the territory. Teak and mahogany have already been partially exploited, but it is hoped that a good supply of native soft woods may be located, as the demand for this class of timber, which will provide material for orange and other fruit boxes, is much in excess of the local production.

EMPIRE COTTON GROWING COMMITTEE.*

THE Empire Cotton Growing Committee is now in a position to outline the executive organization it considers necessary to carry out the objects recommended in its main Report published in January, 1920 (Cd. 523). This organization is subject to modification as experience and local conditions require. Most of the funds will be spent abroad in cotton growing countries; and the organization proposed provides primarily for the employment of men abroad with a central office in London to co-ordinate work. As it has not been possible to consult local Overseas Administrations on the details of these proposals, a scheme has been prepared suited, in the first instance, to countries in which cotton growing has not as yet been very largely developed. Many features of the scheme will be of assistance to all the cotton growing parts of the Empire, and, though it is probable that some of the more highly organized of these, such as the Dominions, India and Egypt, will prefer to finance their own arrangements in whole or part, the Committee will be glad to co-operate closely with such countries and, on their invitation, to extend to them any portion of the proposed organization which may prove acceptable.

It will be seen that to carry out adequately the work which the Committee is convinced must be done in order to stimulate cotton cultivation an annual sum of £200,000 is needed.

FINANCE AND SUPERIOR ORGANIZATION.

It is proposed that the funds be provided jointly by trade interests and by the British Government. These funds will be vested in trustees as custodians under Royal Charter.

*With acknowledgements to the *Board of Trade Journal*.

There will be a general Administrative Council representative of trade interests, the Board of Trade, the Governments Overseas, and of the offices of the British Government associated with those countries. The direct control will rest with an Executive Committee appointed from this main Council whilst for particular aspects of the work, *e.g.*, the different countries, research, information, etc., there will be sub-committees to which men of special qualifications and not on the Administrative Council will be co-opted.

EXECUTIVE WORK.

The work which, according to the Report of January, 1920, must be done, if the production of cotton within the Empire is to be considerably increased, falls into three groups.

Group I. Mainly administrative in its character, requiring on the part of the staff general knowledge and organizing ability, includes:—

(1) Questions affecting general policy, finance and establishment.

(2) Correspondence with, advice to, information from Government Departments, Local Administrations, Agricultural Departments, and individual planters in cotton-growing areas, and the strengthening and supplementing of local staffs for work on cotton. This last will normally be done by finding men qualified to assist in developing cotton cultivation and by providing their salaries.

(3) Forming and controlling an organization for keeping in touch with local developments in all countries in the Empire actually growing cotton and in those suitable for cotton growing.

(4) Organizing and carrying through pioneer work in suitable areas.

(5) Bringing cotton growers and other workers on cotton growing together by the dissemination of information, and by providing them with facilities for keeping abreast with progress and development throughout the world.

(6) Giving information, when available, to financial and commercial companies contemplating growing cotton; but on this point the Committee is of opinion that

investors wishing to invest in cotton growing will be well advised to begin by making full enquiries for themselves.

Group II, Demanding scientific knowledge and training on the part of the staff—will include :—

(1) Keeping abreast of, indexing, having available and disseminating judiciously information on all scientific and experimental work on cotton growing and re-acting on cotton growing.

(2) Collecting full knowledge of the characteristics of all varieties of cotton.

(3) Keeping in close touch with the British Cotton Industry Research Association.

(4) Fostering actual research on cotton growing—

(*a*) By the establishment of a special cotton research station or stations abroad.

(*b*) By assisting in providing facilities for training men for the various agricultural services.

(*c*) By assisting in selecting men for special work on cotton abroad.

Group III, Mainly of a commercial character—will include :—

(1) Valuing cottons and keeping in touch with all markets.

(2) Where advisable guaranteeing prices to growers.

(3) Taking the necessary measures to secure to growers better prices for better cotton.

(4) Where desired ginning and marketing cotton.

(5) Spending money on the promotion of the growing of cotton as compared with other crops.

In each of these groups there is much which must be done abroad, but all will require to be co-ordinated, and the three branches must work together supplementing each other.

The Central Office.

This will be located in Westminister. It will undertake the general direction and control. This and the work described in the three preceding groups which falls directly on the Central Office will entail :—

(*a*) Association with the Government Departments and the Cotton Industry and organizations at home.

(*b*) Acquiring and maintaining an intimate and detailed knowledge of the physical conditions and progress of cotton growing, the existence and development of competing crops, the facilities for transport, the labour supply, the conditions and terms on which land is obtainable, etc., in all the tropical portions of the Empire.

(*c*) Close liaison with the Overseas Governments and the Departments of the Home Government associated with them.

(*d*) The employment of selected men who by touring will keep in touch with local developments.

(*e*) The collection and dissemination of all scientific and experimental work done on or bearing on cotton, etc., and the work in Group II. (1, 2 and 3).

(*f*) The general direction of the research institutes to be established abroad, and consultation with scientific men on special problems as required.

(*g*) Arranging for the efficient carrying out of the Commercial Work detailed in Group III.

(*h*) The establishment of a Journal, or co-operation with other bodies for this purpose.

(*i*) The engaging of men for strengthening and supplementing agricultural departments overseas.

(*k*) Aiding in providing facililies for training men for agricultural departments.

To discharge this work the following staff and organization will be necessary :—

(1) A General Director who should be selected for his organizing capacity and experience and general knowledge. It would be advantageous if he had experience of tropical administration and conditions and also of cotton.

(2) A General Secretary.

(3) Three sections are needed for the work in the Central Office under (*b*) and (*c*), *viz.*, acquiring and maintaining detailed knowledge of the cotton growing countries in the Empire. These sections would deal respectively with

(i) Egypt, the Soudan, India and the East.

(ii) The Rest of Africa excluding the Union of South Africa.

(iii) The self-governing Dominions and the West Indies and other parts of the Empire.

Much of the work for the Journal could also probably be handled between these sections.

Each of these three sections will be in charge of an Assistant Secretary the standing of the Administrative staff in the Home Civil Service.

4. The Committee lay special stress on the work under *(d)*—the employment of selected men as Travelling Commissioners who will keep in touch with local development by systematic touring.

In the development of cotton cultivation, reliance cannot be placed solely or even mainly on a Central Office in London. Any plans for supplementing the staffs of local agricultural departments and for useful expenditure to supplement their efforts, must be first discussed with the local administrations and local agricultural departments, to insure there cooperation and assistance. The various countries should also be visited periodically to promote the maintenance of a full understanding with local administrations. In cases in which exploratory work is organized directly by the Committee, or men happen to be employed abroad directly under the Committee, periodical inspection is necessary. The Central Offices thus need the services of Travelling Commissioners free to tour who should be able to spend sufficient time in the countries they visit to absorb local conditions. Four such men will suffice. At first they will probably be mostly engaged in bringing back suggestions as to how local efforts can be supplemented, whether capital is required for cotton growing in particular localities, and what further exploration is needed. Agricultural knowledge and administrative experience is desirable in these Travelling Commissioners.

5. For the work under *(e)* and *(f)* scientific knowledge is required on the staff. A man who had been engaged on scientific work in the tropics, preferably on cotton, and had recently returned to England on pension, should be well suited for much of the work of recording and disseminating information useful for men abroad at work on cotton. The actual Research work to be undertaken abroad will be controlled in each place by a responsible chief, but the financial control will be in the hands of the General Director. The study of special scientific problems will be submitted as required to the highest available authorities by the General Director.

6. It is expected that much of the commercial work under *(g)* will be done by the British Cotton Growing Association, with whom an agreement has been provisionally arranged, but it will be necessary to have a Commercial Secretary in the Central Office.

On this basis the general scale of salaries for the staff directly attached to the Central Office would be approximately as follows:—

General Director	...	£2,000 or upwards.
Travelling Commissioner	...	£1,200 to £1,800 plus expenses.
General Secretary	...	£ 750 to £1,000.
Assistant Secretaries in charge of Territorial Sub-Sections.		£400 to £800.
Scientific Recorder	...	£500 to £750.
Commercial Assistant	...	£750.

The cost of the Central Office including rent and minor expenses is estimated to amount to about £25,000 per annum.

THE STAFF ABROAD.

Research Station or Stations Abroad.—These will conduct the higher research regarding the cotton plant, as distinct from investigations designed to promote the interests of particular areas, and will be under the financial control of the General Director.

The exact plans are necessarily postponed until the Administrative Council comes into existence and the Director is appointed. It is, however, considered, that a beginning could be made with £20,000 per annum to cover salaries and expenses including interest and amortisation on the initial outlay of capital.

SUPPLEMENTING THE STAFFS OF AGRICULTURAL DEPARTMENTS OVERSEAS, AND PIONEERING.

It is convenient to take these two classes of work together as they will only be undertaken after consultation with the Local Agricultural Departments and as the men, who will be engaged for such work, will possess qualifications similar to those required by Agricultural Departments abroad. The duty of providing an Agricultural Department falls primarily on the local government. Whilst the different Agricultural Departments have done much exceedingly valuable work on cotton, yet the care of all crops falls naturally within their duties. If exceptional attention be desired for cotton it is not unreasonable that the Committee should find and pay additional men required for that purpose. In working any such proposals the

greatest stress is laid on the fullest co-operation with the local Agricultural Departments. Help could, of course, be given to them by block grants, but it is believed that more rapid progress may be expected and greater efficiency attained if these additional men are found and paid for by the Empire Cotton Growing Committee. In putting forward this scheme there is no intention of creating an independent body inside a local department. The additional men will be posted to a department for a specified period, after full consultation with and on invitation by the local administration. They will be fully under the control of the local Director of Agriculture, subject to the same rules of discipline as the local officers of the department, and draw their salaries and allowances through the local treasuries, the Committee being responsible to the Local Government for providing the funds needed. As the work of these men will benefit the locality, it is hoped that the Local Governments will supply the subordinate staff necessary and also the local travelling expenses; though in the case of some of the less developed countries it is recognised that contributions may reasonably have to be made for this purpose.

This method is preferable to a system of lump grants to departments, because :—

(1) It creates a body of men who will have specialised in cotton, from which at times a Local Government may be very glad to draw.

(2) It is more flexible—local departments are necessarily organized according to the unit of administration, and transfers of men between different administrations are not always easy to obtain.

(3) It will provide men from which the Travelling Commissioners can later be drawn.

Their emoluments will conform to those paid by the Agricultural Departments of the locality, with proper provision for a system of gratuities based on length of service in lieu of pensions; therefore, in framing these estimates the scales of pay in force or proposed for many of the Agricultural Departments abroad have been examined. In calculating the numbers required, the countries which are in a comparatively early stage of development have chiefly been considered, though invitations to extend the same system to the countries more fully organized will be welcomed.

Calculating on this basis, it will be necessary to provide for a staff of 90 men (including scientific workers, and agricultural officers of different grades) as supplemental to local Agricultural Departments. This it is estimated will cost £88,000 per annum. Pioneering work, capital expenditure, and local expenses in countries in which local administrations would require assistance will absorb another £15,000.

The provisions for gratuities on termination of service will require the formation of a sinking fund of £7,000 a year.

Travelling allowances for transfers, journeys home and outward—£5,000.

This section of work is, therefore, estimated to cost eventually £115,000 per annum.

EDUCATION.

Other funds which will mainly, but not necessarily, be spent at home will be required for the work under Group II. (iv) b—*i.e.*, assisting in providing facilities for training men for the various agricultural services abroad.

It is estimated that to meet the demand for scientists for work on tropical plants, University staffs in this country should be increased specially for this purpose by at least:—

	£
4 Professorships	5,000
15 Lectureships in Science	12,000
6 Administrative and Technical Lectureships	5,000
20 Post Graduate Studentships ...	5,000
	27,000
Less Contributions from other Industries say	16,000
	12,000

Such a staff will be of service to all industries using tropical vegetable products, and it is proposed to endeavour to co-ordinate these industries in a common effort for this purpose. It is suggested that the cotton industry will be doing its share if it finds £12,000 a year.

INFORMATION.

The cost of supplying information and of the issue of a journal has been included in the estimate for the Central Office.

COMMERCIAL HANDLING.

Under this head a great variety of expense is possible, and apart from the difficulty of estimating what money will be wanted, there is the further question as to the amount of assistance that may be expected from the British Cotton Growing Association. It is, of course, understood that in doing commercial work for the Empire Cotton Growing Committee the British Cotton Committee Association will neither make a profit nor incur losses to themselves, and, therefore, profit and loss will fall to the account of the Empire Cotton Growing Committee.

The kind of expenses which will be incurred include the following :—

(i) Guaranteeing prices.

(ii) Advances against growing crops.

(iii) Ginning, baling and costs of bringing to market.

(iv) Carrying the crop and merchanting.

The following points await further consideration :—

(a) The probable capital required (other than that which may be obtainable each season from the Banks) for financing every 100,000 bales up to, say, 500,000.

(b) The losses which must be expected if a liberal policy of forward buying is adopted, remembering the possibility of a fall in in the price of cotton during the next few years.

There is another kind of expense not dealt with in the main report, viz., the setting up of experimental cotton growing enterprises on a semi-commercial scale. The work proposed to be undertaken by the British Cotton Growing Association in India might be metioned as an instance. It is hoped that before long shape may be given to another organization for growing cotton in suitable places on commercial lines. In the meantime it is considered wiser not to include work of this kind within the scope of this budget.

SUMMARY.

The summary of the foregoing annual financial requirements is :—

	£
Central Office and Journal ...	25,000
Research Stations abroad ...	20,000
Supplementing staffs overseas and pioneering	115,003
Education	12,000
	172,000

To this must be added the Commercial Handling for which no estimate has been framed, but which will require funds.

It is clear that the annual outlay under some of these heads will not at first be realised, but on the other hand it will be necessary at the earliest stages to be very liberal under the head of Commercial Handling in places in which the growing of cotton is still in its infancy. Thus, in order to carry out the recommendations of the main report, an income of approximately £200,000 ought to be assured.

ECONOMICS IN THE WEST.

Some Economic Problems.

London, July 15th, 1920.—Economic problems do not assume a less important character as the war becomes more a memory. There has indeed, in the past few weeks been quite a revival of old fears and doubts owing to a renewal of the active form of industrial discontent. The miners' new demands are of themselves sufficient to excite lively apprehension. Like the daughter of the horse leech of Canning's story they are continually asking for more and the appetite grows on what it feeds on. It has yet to be seen, however, whether they have not this time over-reached themselves. There is a spirit abroad which bodes ill for the success of their demands. A growing feeling exists that the time has come to call halt! to these impudent exactions, and that a strike might be the lesser of two evils. The miners' leaders it is believed would have some difficulty in getting the entire body of miners to come out in support of the present demand which has far more a political than an economic character and which even if successful would not add very much to their already over generous emoluments. And if a strike did occur it could not in the nature of things last very long. Roughly there are at present employed in Great Britain about a million men in the mines, and strike pay would have to be on so vast a scale that the funds at the disposal of the Miners' Federation would soon be exhausted. On the whole I am inclined to think that matters will not be allowed to go to extremes in this direction. But the outlook, apart from the mining trouble is not bright and it is quite likely that before the year is out we shall have another industrial crisis of a serious character. The hope is that the general good sense of the British working classes will avert a prolonged conflict or even one which may have a general character. At the persent time there is exceptionally little unemployment and consequently distress is practically non-existent. What discontent there is is largely the artificially manufactured product of an agitation conducted by extremists for sinister ends. As has happened before in similar circumstances it is probable that the extremists would be routed immediately they put their plans in operation.

THE COTTON TRADE.

In spite of Labour ferment the trade of the country in all the great staple industries continues good and even to show signs of expansion. There are exceptions, of course, due to special causes, such, for example as the cotton trade which has received a bad check owing to the phenomenal fluctuations in the Eastern exchanges! but these do not detract from the general prosperity which manufacturing enterprises are enjoying at the present time. Evidence of the spirit of enterprise which is animating the captains of industry at this juncture is furnished by the action taken by the Ebbw Vale Steel Company in extending its plant. This great corporation which is one of the most important steel producing companies in Great Britain has just installed at its works in Wales at an approximate cost of a million pounds sterling, a new blast furnace which is stated to be the largest in the world. An output of 3,000 tons per week is promised and this may be exended. In any event the production will be enormously greater than has hitherto been secured at any steel works in this country. The experiment of this huge blast furnace—for experiment it is as it is by no means certain that the great size of the undertaking will be financially justified—is being watched with great interest by those concerned in the steel trade, and if it succeeds it will doubtless be a pioneer of a great movement which will embrace all the leading steel producing enterprises of the country. Meanwile, exhaustive trials are being conducted with new methods of smelting

with a view to the economical production of steel. Mr. J. G. Harvey, the well known expert has recently demonstrated the saving obtained by the use of pulverised coal with special reference to its application in metallurgy. If the results are as good as they are represented to be there will be a great reduction in the cost of steel manufacture to the benefit of the industry. There can be no question that British manufacturers will reqire all the help they can enlist in the matter of economical working to meet the intense competition which they will have to face as soon as the present abnormal demand for steel has given place to the ordinary steady requirements of the world's markets.

ALCOHOL FOR POWER PURPOSES.

Some impatience is being shown in interested quarters at the indifference and apathy of the Government in regard to the development of the use of alcohol for power purposes. Power alcohol, as it has come to be called, would be a valuable adjunct to petroleum, benzol and other products used in internal combustion engines, and its production on a large scale would seem to be a reasonable measure of precaution in view of the rapidly diminishing supplies of petrol and the ever rising cost of the article. But the authorities have put all sorts of obstacles in the way of its manufacture and they show no present intention of changing their policy. At the present time a considerable quantity of alcohol is used in the manufacture of varnishes, inks, dyes, etc. The product used is pure alcohol denatured--that is rendered undrinkable—by the introduction of some outside element. At present the standard denaturant is wood naptha, an expensive article whose use would bring the cost of power alcohol to a prohibitive point for motor work. What is needed is a denaturant which while performing all the functions necessary to destory the potability of the spirit yet preserves its character as a means of power. It is suggested by Major General Sir John Fowler in an interesting article he has contributed to the Trade Supplement of the *Times* that instead of manufacturing alcohol and denaturing it that the Government should give a free hand in the matter and that enterprise should be directed to the production of a power alcohol which could be denatured at small cost by the addition of some ingredient readily obtainable. He does not consider that it would be possible to manufacture power alcohol from foodstuffs grown in the United Kingdom in consequence of the great cost of such material. But he foresees no difficulty in the way obtaining from overseas abundant supplies of suitable material. He thinks that owing to the great bulk of the raw material it will be more profitable in the long run to manufacture the spirit abroad and impart it and he foresees the day when " pipe lines are run to producing areas in the same way that they are now run to petroleum fields." The question is one which has a profound interest for India. Material for the production of alcohol exists in abundance in almost every part of the country and it is certain that if ever power alcohol attains to the position which Sir John Fowler anticipates for it India will be one of the greatest power alcohol producing countries in the world. The question is one which ought certainly not to be lost sight of in the industrial renaissance of India.

IRON FOUNDING ENTERPRISE.

The various research committees established under the auspices of the Research Association are getting to work and it is already evident that good results will flow from this interesting new departure. It is surprising how vividly the country has been awakened to its industrial deficiencies by the war. This is true of almost every department of trade, but there are industries which have had exceptionally strong shock in consequence of the experiences they have had of the inadequacy of their methods and the obsolesence of their equipment. The Iron founding industry supplies a case in point.

Though modern iron founding had its home in this country the industry is seriously out classed by the iron founding enterprise of the United States which is conducted on scientific lines of its own and has attained to a degree of efficiency which our iron founding concerns cannot boast of. An important feature of the advance of the American industry, a writer in the *Bermingham Post* states, is the study of the mixtures of pig iron most suitable for different classes of foundry work. "Specifications built up on these investigations have entirely superseded the unregulated supplies of an earlier day. This matter of drawing up standard specifications in the light of scientific tests may almost be said to be a novel idea as applied to British foundries. Out of the 2,800 foundries in the United Kingdom how many have a laboratory to help them in their work? How many have any exact knowledge of the constituents of the iron they work in or any means of ascertaining it? Very few indeed. The vast majority of the foundries are carried on with eyes which are blind to the light modern science has thrown upon their every day difficulties." It is to the remedying of this state of affairs that the Research Committees will devote their attention. There is the more enthusiasm for the work as it is widely recognized that with up-to-date equipment and efficient organization the existing factories would he capable of an immensely increased output. Innumerable users of castings are crying out for larger supplies to-day. This demand is believed not to be a passing phenomenon due to the abnormal requirements of the war. Foundry capacity, says the writer whom I have already quoted, has not kept pace with the expansion of related branches of manufacture, and they will all suffer as long as this unbalancing continues. It is of the first importance that reform should be gradual and evolutionary so as to dislocate production as little as possible. The transition has, of course, already begun. Many iron founders are having recourse to moulding machines as a means of augmenting output, and if the experience of America is anything to go by machine moulding is destined to become very much more general than it has been hitherto. From all this it is to be gathered that the British iron founders are now very wide awake. The unfortunate thing is that the men are not equally alive to the needs of the time. They view all new developments with distrust and are so blind to their own interests that they decline to abandon the old deadening methods of production which eschew payment by results and put a premuim upon slow and uneconomical work. Enlightenment may come some future day when the strain of foreign competition has revealed unmistakably the essential weakness and inefficiency of the old conditions of working.

THE IMPERIAL EXHIBITION.

The forthcoming Imperial Exhibition in London to which the home government have given a substantial subsidy will afford a unique opportunity to the various outlying portions of the Empire to demonstrate their industrial capacity. So far as the Dominions of Canada, Australia, Newzealand and South Africa are concerned there is no doubt that the opportunity will be availed of to the full. The respective governments of these countries are already taking up the matter in earnest and a full and interesting display of their products is assured. India, it may be trusted, will not fall behind the other portions of the Empire in showing what she can accomplish industrially. In some respects she has more need of the publicity that an exhibition affords than any of the self-governing Dominions. While most people here are well acquainted with the progress of Canada and Australia they are lamentably ignorant of the great strides that India bas made in recent years in industrial development. The fault is partly that of the Government which has not availed itself to the right extent of the means of popular propaganda which the self-governing Dominions have long and successfully used. Of late there bas been a welcome change in the official attitude, but there is still mnch to be done before the right measure of popular enlightenment is reached. What is wanted is an India House in a prominent position in in the centre of London where there would be permanently displayed specimens of the characterestic manufactures and raw products of India. Such an institution would do more than untold reams of despatches and uncounted tons of blue books to bring home to the British mind the great industrial capacity of India and the unique character of its economic resource.

ARNOLD WRIGHT.

INDUSTRIAL NOTES FROM THE UNITED STATES.

Has America Reached Its Cotton-Producing Limit? 12,000,000 Bales Yearly Average.

Washington, D.C., U.S.A., July 26, 1920.—According to every indication, the United States has reached the actual limit in the production of cotton. This appears to be the conclusion of the United States Department of Agriculture.

Of all world industries, cotton is the most widespread. Of all commercial romances, cotton and its affiliated industries supply the greatest amount of interest. Since 1800 no other branch of business has witnessed such an expansion, and it is difficult to conceive of any commercial enterprise which has a greater or more assured future. But America has reached the peak of its cotton production.

It is estimated that over 6,000,000 persons are directly engaged in the production, manufacture and distribution of cotton, while reliable estimates have placed the amount of capital invested at considerably over $30,000,000,000. The amount of cotton produced in the world has shown a remarkable increase. While statistics of such a wide-spread industry are necessarily more or less approximate, it is believed that cotton production has grown from 500,000,000 pounds in 1800, to 1,500,000,000 pounds in 1850, 7,500,000,000 pounds in 1900, and 14,000,000,000 pounds in 1913—which is the last year which can be called normal.

The most interesting phase of the figures just quoted is the practically doubled production since 1900, showing that even in these modern times great capacity for the expansion of cotton consumption exists. Since 1914, however, little increase in the world's cotton production has taken place, and one of the greatest problems now confronting the industry, and one which is receiving a great deal of serious attention, is the increase in the area allotted to cotton cultivation necessary to keep up with increasing consumptive demands.

A study of world cotton statistics and conditions shows clearly that a serious shortage of cotton exists. Although there has been a marked improvement in the present American crop over the early estimates of the Department of Agriculture and other authorities, many unfavourable factors may yet reduce the anticipated yield. Should the present American crop fail to come up to the most recent estimates it will mean the sixth short crop—an unprecedented situation as far as American cotton is concerned.

From the date when the southern American states first began to supply the world with its principal stocks of cotton there has always been a feeling in textile circles throughout the world that when more cotton was needed America would supply it. Up until the present this hypothesis was reasonably accurate. Now, however, a different state of affairs exists.

There is a certain point in every economic situation where the peak, or saturation point so far as ability to produce is concerned is reached. This is very near the case in America to-day. While it is true that considerable areas still exist that might be turned into the cultivation of cotton, it is also true that with the growing tendency of southern states planters to diversify their crops there is a steady encroachment on the amount of land that will hereafter be devoted to cotton. Besides that, the boll weevil pest has been a hard one to contend with, and labor conditions have been anything but satisfactory.

In previous years short crops in this country and resulting high prices stimulated the production in the south to such an extent that an equilibrium was generally reached the following season. Efforts to grow cotton outside of the United States in competition with the southern planters generally failed

because there was so much land in the south still available for cotton that no other country could successfully compete with it. This situation no longer exists, however, and for the first time in the history of the industry the growing of cotton on a large scale in various other parts of the world seems possible of success.

The world is now consuming about 22,000,000 bales of cotton per year, but good authorities believe that the present decade will see an increase in world demand of at least 10,000,000 bales in addition, with a like increase in the decade to follow that.

Where the cotton is to come from to allow the world to double its annual consumption is the big problem. It certainly cannot come from the southern American states. Assuming that the American crop will continue to average 12,000,000 bales, as it has for the past five years and will probably equal this year, it is plain that vast cotton-producing districts in other parts of the world must be developed without any loss of time if a pronounced shortage of cotton is to be avoided.

PRESS ATTACHMENT PRINTS ADDRESSES ON PAPERS.

Printing the subscriber's name and address on the upper right hand corner of each newspaper, as it goes through the press, is the feat successfully performed by an attachment just devised by an inventor of the state of Illinois. The addressing mechanism may be fixed to any standard web printing press or to a flat-bed perfecting press. The address slugs are contained in a series of vertical "galleys," from which they are fed down, ejected singly into a drum, inked, impressed upon the paper, and then passed into a receiving galley below.

By means of a spring-controlled sliding gear in the feed drive, the addressing mechanism is automatically stopped in case of a broken web or other accident in the press, or for any other reason, while the operator is kept informed as to the working order of the addresser itself by two pilot lights. In case the addresser is stopped for any reason, the press continuing the operator simply inserts a marker in the paper receiver, to indicate the unaddressed copies, which are then used for the customary needs of the office and for street sales, etc.

The whole ingenious mechanism is mounted on the press in such a position that its operator and the pressman cannot interfere with each other, but remain entirely independent. This feature, as well as the device itself, is fully protected by the patents.

MINING COPPER FROM "FIRE STOPES."

Peeling the side of a mountain off a great copper ore deposit as one would strip the skin off a banana, and blowing streams of cold air on masses of incandescent rock to cool them, are two of the remarkable mining methods of a great copper company in the state of Arizona; but because the cold air does not always cool all the glowing copper rock sufficiently to enable the miners to work the company will now resort to steam shovelling in order to clean out its "fire stopes."

At this time, some months after the beginning of actual operations on the surface, the company has removed a large part of the old slag dump which filled the gulch below the original shaft head and covered the site of the contemplated operations, which experts consider the most efficient for handling ores. The next step will be to remove the mine buildings from their present location in the gulch, start the steam shovels eating their way into the side of the hill, and, in time, to send loaded ore cars direct from the surface to the smelting plant, which is about seven miles away.

In common with copper mines everywhere, this particular mine has endured a plague of fires in its timbered stopes. And no wonder, for much of the ore carries 30 to 42 per cent of sulphur, and even the lighter sulphur-laden ores contain from 3 to 25 per cent of this inflammable element.

The first fires recorded in the mine occurred in 1894 and were caused by a cave-in of the ore body. Since then there have been numerous fires in timbered workings, for which several causes have been attributed. It is even stated that true spontaneous combustion was responsible for some of them.

The adoption, since 1908, of the mill-hole method of mining has done away with some of the fire danger, and even in that day the company had decided to reserve large bodies of ore for steam shover work.

Since the miners at this location began fighting the flames they have used virtually all known methods in vain. Flooding with water of no avail, for the water escaped through the broken ground; carbon dioxide gas, blown into the hot areas, failed becauce there was always enough air in the fissures to nullify the smothering effect of the heavy gas; pipe lines were laid and jets of steam were forced iuto the ground, but the inability of the miners to seal up the fire areas made this method useless.

Several years ago the company adopted the so-called plenum system—remarkable from the point of view of the layman, in that it sought to stop burning by blowing air on the huruing materials. Stopes were opened up where the rock glowed in the dark its internal heat. Gas from the oxidized sulphur drove the miners out in disorder, and no helmets availed to protect them.

These hot stopes were gradually cooled by means of gentle currents of air, blown into them under an intricate system of ventilation control. Temperatures of 1,200 degrees F. were reduced to 120 degrees in about five weeks, and further lowered to 100 degrees in the course of time. The cooler air currents also protected the miners and enabled them to breathe while they were recivering the calcined ore.

All strictly underground work in the fire stopes will be discontinued in the zone where the steam shovels will rip out the heart of the mountain.

There are other steam shovel projects in operation throughout that section of the country. At some points low mountains of copper ore are being moved bodily into the mills. At one place, standard guage railroad lines zig-zag up a mountain side and carry the shovels into a great semi-circular cut.

At the mines now in question three shovels already are operating. One of these bites out eight cubic yards of material at a swing, and loads a car with three scoopfuls. This monster, much resembling a misplaced Mississippi River steamboat, has been reducing the slag dump of many years on which many of the old mine buildings were standing. The material is carried down the gulch to what is known as the 500-foot level, where it is being used to construct a flat for a new townsite. Incidentally, the company is going to devote part of this made ground to a baseball field for the miners. The "shelf" will overlook 40 miles of the near-by valley and a wonderful panorama of distant mountain peaks.

About 14,000,000 tons of waste will be removed by the shovels in the course of uncovering the ore, and it is expected that approximately 5,000,000 tons of copper ore will be exposed in the excavation. The pursuit of the hot ore will carry the diggers downward on spiral tracks until it becomes no longer the most profitable way to mine.

Truck With Three-Point Spring Suspension.

An interesting adaptation of the principal of three-point spring suspension to a recently-constructed six-ton motor truck has resulted in making the vehicle peculiarly flexible as to road obstructions. The single front spring is arranged transversely, above the front axle, and the truck frame is pivotally supported at its center. This allows either front wheel to be thrown considerably above or below the road level without affecting the stability of the load. The rear springs are of the regular longitudinal semi-elliptical form, but with sliding contracts with the frame instead of

the usual shackle arrangement. The lubricating system used does away with the common array of grease cups about the chassis, and the rear bearings of the tuhular truss rods are lubricated by heavy oil carried by the rods themselves. The 28 horsepower engine will handle a 75 per cent overload, and is most efficient at a truck spread of 14 miles an hour.

Taking Long-Distance Photos With Field Glasses.

For most photographers who have progressed beyond the "you push the button and we do the rest" stage the tele-photo lens has always held a great fascination, and the possessor of one of these pieces of apparatus is usually looked up to with considerable respect by his less fortunate brethern. It is not essential, however, to own one of these high-priced lenses in order to secure excellent pictures of distant scenery or objects. With a pair of field glasses and the ordinary film kodak remarkable long-distance photographs may be obtained. Of course, a focussing plate camera is more convenient, but it is not vital to producing satisfactory results.

If a film kodak only is available the regular kodak lens should first be removed and the field glasses mounted in front.

A thin board, with a hole drilled to allow the tripod screw to pass through, is first set on the tripod and the kodak or camera is then firmly screwed in place. A small box notched to receive the glasses is set on a board in front of the kodak so that one of the eyepieces will exactly coincide with the opening in the kodak lens board. A piece of black velvet cut to fit between the lens board and eye-piece will make this joint light-proof. In order to secure a sharp picture the back of the camera should be removed and a piece of ground glass substituted. By means of the adjusting screw on the field glasses a remarkably sharp image can be obtained. Exposure will be largely a matter of experiment at first, but a few trials will readily determine the correct time to be given. It is almost impossible to approximate a correct exposure off-hand, as it will entirely depend on the type of field glasses used, but it is said that a good starting point is twenty times the exposure that would be given with the regular lens open to its widest stop.

Although not so portable and convenient as a tele-photo lens, it will be surprising what satisfactory results can be obtained with this combination of field glass and camera. Even the smaller "opera glasses" can be used to good advantage, and some amateur photographers are using with considerable success a surveyer's transit or telescope mounted before a camera in this way, and which is said to produce truly remarkable results.

At first thought it might seem that by enlarging a small negative taken with the ordinary lens everything accomplished by the telephoto lens might be reached in a more simple way; but a single trial will show that after a few diameters the enlargement will possess very "fuzzy" details. A tele-photograph gives details that are not visible in the smaller negative and cannot be brought out by enlargement. With the simple apparatus described, a very fascinating field is open to the amateur as well as the professional. One important point to be kept in mind is that it is quite necessary to have the extension box firmly fixed to the camera bed or on the tripod top as well as the camera to the tripod. An unnoticeable move on the average camera that would do no harm will spoil the exposure taken through a field glass lens.

ALFRED T. MARKS.

NOTES.

The Admiralty desire to call attention to the importance of the Thermionic Valve making industry in Great Britain. The development of thermionic valves for wireless telegraphy increased enormously during the War, and it is believed that the quality of articles produced in Great Britain is now superior to that of any other country. It is contended on behalf of the British industry that :—

(a) The United Kingdom produces a larger variety of standardised valves than other countries, and is consequently better capable of supplying types to meet any possible requirement.

(b) High power valves for W-T transmission, radio telephony or any other purpose requiring heavy oscillatory currents have been developed and standardised to an extent which is believed to be far in advance of that of any other country.

(c) The British technical publications on valve subjects show that a higher standard of technical knowledge has heen obtained in the United Kingdom than abroad.

(d) There is some doubt as to the actual number of valves being produced by different countries, but it is probable that, although during the war Great Britain produced less quantities than, say, America, the facilities for production, organization, machinery, etc., have been better preserved in this country than abroad during the reaction experienced in the post-war period.

A list of British manufacturers of these valves may be obtained from the Department of Overseas Trade, 35, Old Queen Street, London, S.W.I.

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Madras Publicity Bureau in a note says :—There is and has been a considerable stringency in the money market. The floatation of a large number of industrial companies and the requirements of trade, increased by the rise of prices have absorbed a large amount of money, largely in the shape of share capital. These demands, offering attractive rates of interest or high expectations of profit, have diverted the funds which would otherwise be available for the co-operative movement, which in consequence is hampered by the scarcity of money. In this general dearth of available capital the Madras Bank and Nidhis and private companies and individuals have raised the rates of interest paid to depositors and charged to borrowers. In this circumstance, in order that a larger volume of money may come into the co-operative banks it is proposed that more attractive rates of interest shall be offered by them to the depositors. The Madras Central Urban Bank has accordingly suggested that its rate of interest on deposits shall be raised to 6½ per cent and its rate on loans to Central Banks to 7½ per cent and that the corresponding rate of interest on loans by central banks to primary societies shall be 8½ per cent, and that on loans by primary societies to members Rs. 10-15-0 per cent. This proposed increase in the rate of interest on loans by the provincial banks to central banks, by central banks to primary societies and by primary societies to members will not apply to past transaction; and it is to be anticipated that the increased rates will be reduced when greater ease in the money market admits of getting money at cheaper rates. The Government have agreed to the above suggestion and have advised the Registrar of Co-operative Soceities to register the necessary amendments to the bye-laws accordingly.

H. M. Consul at Helsingfors says:—In the course of a tour of inspection of the Finnish timber and paper-making industries, made in company with the representatives of United Kingdom newspapers, a visit to the town of Enso was paid. Here a new mill is expected to start work in September next. It will commence with a production of 40,000 tons per annum, but plans have already been drawn up for considerable extension, which will increase the entire output of the establishment to 90,000 tons. Some of the machinery has been supplied by a British firm. It should be stated that most of the machinery installed in the country's mills is of German, Swedish, or United States origin, very little having come from the United Kingdom. This was not, however, the case with boilers, which were mostly of British make. According to the latest available statistics there are in all 26 paper mills in England, with 71 paper-making machines and 7 cardboard mills with 12 machines. The water-power utilized for working these mills is 73,390 horse-power and steam 13,820 horse-power. The number of hands employed exclusively at the paper mills is 6,096, and the yearly output is 230,000 tons. The capital involved is 261,998,000 Finnish marks. There are also 18 sulphite mills producing annually 190,200 tons, capital involved 194,244,000 F.Mks. and 6 sulphate mills producing 66,000. The capital involved is 104,000,000 F. Mks. The sawmills number 375, employing 14,111 hands with an annual production in value of 98,962,900 Finnish marks.

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The Madras Publicity Bureau in a note says:—The Government have carefully considered the question as to how far export of Ongole cattle to Java and other foreign countries has been detrimental to the breed and whether any steps should be taken to prohibit such export and are of opinion that the deterioration is not due to export alone, and that other means should be adopted to improve the breed. The Board of Agriculture which met at Pusa in December 1919 recommended that, with a view to increasing the supply of animals to meet increased demands consequent on the change in economic conditions, Local Governments should encourage and foster the cattle breeding industry by the establishment of farms in breeding tracts, by the distribution of breeding stock and by propaganda. It was further suggested that endeavours should be made to fix a standard of quality for the different breeds on a quantitative basis with a view to guaging the extent of any deterioration or improvement that might take place. The Government have already sanctioned the opening of a cattle farm at Chintaladevi in the Ongole tract and proposals to open in the Kangayam tract have also been approved and bulls from these farms will be put out for stud purposes or sold every year. The Director of Agriculture will consider what other steps are possible to secure the breeding of the best types of cattle in the Presidency and report to the Government from time to time on the measures he proposes.

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The Government of India calls attention to the danger of anthrax communicated by infected shaving brushes in the following lines:—"During the past year, several cases of anthrax due to infection contained in shaving brushes were reported. The majority of such brushes are suspected to have been made in Japan and unless arrangements can be made to exclude infected shaving brushes from the market it is desirable to warn the public against the danger of contracting the disease from such brushes. The danger is not necessarily confined to shaving brushes, but is liable to exist in tooth brushes, nail brushes and cheap paint brushes also. The Government of India are advised that, if intending purchasers obtain an assurance that the brush offered for sale is not one of a batch imported from Japan and disinfect all doubtful brushes, especially the

cheap variety, the danger would be lessened. The following method of disinfection has been suggested :—Thoroughly wash the hair of the brush with soap and warm water to which a little washing soda has been added, rinse in warm water and then immerse overnight in a disinfecting solution consisting of either perchloride of mercury 1 in 1,000, or formalin 2 table spoonfuls to half a pint of water. After removal from the disinfecting solution, the brush should be washed and then allowed to dry before use. The disinfecting solution should initially be at a temperature slightly above the body heat and care should be taken not to allow the hairs of the brush to come in contact with the hand while under disinfection."

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The Acting Commercial Secretary to H. M. Legation at Berne writes to the *Board of Trade Journal* :—One of the chief industries in Switzerland is the manufacture of silk goods, of which the centre is Zurich. This silk industry dates back to the thirteenth and fourteenth centuries. During the last 50 years the district of Zurich has concentrated its energies on silk textiles, whereas Basle has made a speciality of silk ribbons and floss silk. The following table gives the extent of the export value of the Zurich textile industry and the Basle silk ribbon and floss silk industries for the years 1907 and 1913-19 :—

	Export value in millions of francs.		
	Zurich, fabrics.	Basle. ribbons.	Basle. silk.
1907 ...	... 117·0	45·7	27·2
1913 ...	... 112·5	42·0	28·3
1915 ...	... 128·4	60·0	29·0
1916 ...	... 167·7	73·1	61·0
1917 ...	... 144·0	54·8	52·7
1918 ...	... 110·5	52·9	38·7
1919 ...	... 427·0	104·0	55·0

To the above figures may be added ten million francs' worth of silk taminy from Thal (St. Gall). Switzerland also possesses a large factory for artificial silk in Emmenbrucke, near Lucerne. Basle is the chief centre for silk ribbon weaving and competes successfully with France, Germany, and the United States of America. In 1916 the value of silk ribbon exports reached a total of 73 million francs, and in 1919 the value of such exports exceed 100,000,000 francs.

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Mr. Kelway Bamber, Secretary of the Ceylon Agricultural Society, realising that an immediate increase in the yield of paddy-fields is possible by the application of manure, is conducting in the Kandy district an interesting series of experiments and the Senior Agricultural Inspector, Mr. Molegode, has been placed on special duty for the purpose. Three mixtures of fertilisers are being tried and already about thirteen fields have been manured. The mixtures are composed of: (1) fish guano, Ephosphosphates and Nitrolium in the proportion of 35, 40 and 9 lbs.; (2) bone dust and Nitrolium in the proportion of 60½ and 12½ lbs.; (3) Ephosphosphate and Nitrate of Potash in the proportion of 50 and 20½ lbs. These experiments will yield definite results, and the crop which has been manured being a short one, results was to have been available by August, and it was expected that the effect of the manure would continue up to the end of the next crop. The great advantage in these mixtures is that they are cheap, costing only about Rs.15 per acre—an increased yield of 5 bushels pay the cost of the manure, a manure, but a minimum increased yield of 15 to 20 bushels per acre may be expected.

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A Press communique of the Government of India (Department of Commerce) dated Simla, 20th August, says :—The Government of India have decided to appoint a small Committee to consider and report on the extent to which the existing excise regulations in the various provinces of India require amendment in view of the possibility of the manufacture of industrial alcohol on

a large scale being taken up in the near future. The Committee will be constituted as follows:—President. The Honourable Sir John Maynard, K. C. I. E., C. S. I., I.C.S., Financial Commissioner, Punjab. 1. Dr. N. L. Sheldon, Ph.D., F.I.C., Chief Inspector of Explosives with the Government of India. 2. Mr. R. L. Jenks, F.I.C., F.C.S., Chemical Examiner for Customs and Excise, Calcutta. 3. Mr. W. Neilson, Manager, The East India Distilleries and Sugar Factories, Limited, Nellikuppam, Madras Presidency. Secretary, Mr. J. B. Taylor, I.C.S. It is proposed that the Committee shall assemble at Simla on the 28th August 1920. All communications intended for the Committee should be addressed to the Secretary, Mr. J. B. Taylor, I.C.S., care of the Department of Commerce, Simla.

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The tenth meeting of the Education Section of the Board of Industries, United Provinces, was held in Cawnpore on 29th July, 1920. Amongst the matters disposed off were the following:—A number of applications for grants-in-aid were considered and recommended. The Board approves of a set of rules framed regarding the advance to be granted to successful ex-students of the Technical and Weaving Schools for the purchase of machinery and appliances required by the trade in which they have been trained. Rules for the Boarding House attached to the Central Weaving Institute, Benares, were considered and the Board suggested their adoption for all hostels. Constitution of the Advisory Committee of the Government Carpentry School, Allahabad, was considered. The proposal regarding the construction of quarters for teachers and clerical staff at the Technical School at Lucknow, and that of coolie lines was considered and recommended. The abolition of the Junior classes at the Technical schools, Lucknow and Gorakhpur, was considered and recommended.

A novel objection to legislative effort which aims at limiting night work for women appears in the current issue of "Time and Tide," the new and admirable weekly review. The British Government has introduced a Bill which regulates the work of women, young persons and children according to the principles adopted by the Washington Convention, the "Time and Tide" seems to be opposed altogether to the distinction made between men and women. It takes the subject of night work as an example, and declares there is no better case for forbidding it to women than there is for forbidding it to men. Its argument is that all night work is unpleasant, that it should be eliminated as far as possible for both sexes, but that the present proposed distinction between men and women creates an economic injustice for women by forming one more artificial barrier between the work of men and women. This is a fair point for argument, but it reduces conditions of labour to the rather callous basis of economics in a somewhat extravagant championship of women's rights.

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At the recent Brussels Health Congress in a discussion on the right of married women to work in factories—a subject far wider than the one we are now considering—the British delegates as well as French doctors at the Branch Academy of Medicine gave their general view that there are no ill effects to the health of either mother or infant as a result of factory work, but a resolution was passed agreeing to discourage in every possible way except by legal measures the employment of married women. It was not surprising that the British delegates were unable to go to that length, and that they refrained from voting. At the same time, a French physician, describing the views of the French Academy, said that the doctors had agreed that with certain safeguards, such as forbidding dangerous or night work, factory work would not endanger the young generation. It is to be hoped these French doctors will not be considered too old-fashioned in sticking out against night work for women.

GLEANINGS.

Louis Piche, Provincial Forester, estimates that in Quebec there are 360 million cords of all pulp woods. Of this amount there are 155 million cords of available spruce and balsam, which at the present rate of cutting—namely, 3,000,000 cords per year, would give about 52 years' supply. It is estimated that there is in Ontario 250 million cords of spruce and balsam. Of this, it is estimated that at an early date the cut will be 1½ million cords, which indicates 67 years' supply. New Brunswick, with 36 million cords of spruce and balsam, and an annual cut of 1¼ million cords, has sufficient for a 29 years supply.

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It is reported that Dr. Steinbach of Vienna University, has succeeded in restoring mental and physical strength to aged human beings and animals. He states that the revival of the germ glands is made possible by a simple operation and a similar result can be obtained by the repeated application of the Rontgen Rays and Rays and X-rays. The effect of all the operations performed on old men and animals is marvellous. Their appearance is in every respect rejuvenated, their mental and physical capabilities are restored and a new lease of life and vital energy is secured.

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The Canadian Government proposes to assist the shipbuilding industry in Canada by guaranteeing notes up to 50 per cent, of the cost issued by foreign interests for ordinary vessels of 3,000 tons and upwards, repayment to be made within five years. It is believed that this will result in the placing in Canada of from $25,000,000 to $30,000,000 worth of foreign orders for ships.

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A series of cinematograph films showing the development of the industries of South Africa is in course of preparation. The films, which will be exhibited all over the world, will depict the gold mining, diamond digging, steel, pottery, sugar, dairying, fruit growing, dried fruits, leather, wine and coal industries, in addition to port and harbour activities and coal bankering.

The New Zealand wheat crop, 1919-20, is expected to yield 4,100,000 bushels, compared with 6,700,000 bushels in 1918-19. The oat crop is estimated at 5,575,000 bushels compared with 6,885,000 bushels in 1918-19. The yield per acre for wheat is estimated at 29·10 bushels and for oats at 30·85 bushels, compared with 31·57 and 39·87 bushels respectively for 1918-19.

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A new Canadian industry has been established at Deseronto, Ontario, by the Quinte Chemical Company, Limited, who have undertaken the manufacture of juniper oil and cedar oil. Juniper oil is produced from the berry of the juniper bush, a shrub widely distributed throughout Canada from the Great Lakes to the Rockies and beyond them.

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A noteworthy feature of the Canadian export figures for the 12 months ended May 31, is that whereas the United States bought commodities to the value of $22,000,000 more than during the preceding 12 months, the United Kingdom bought approximately $101,729,000 less. The value of exports to France also fell off to the extent of $29,000,000.

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The Government of Jamaica is advertising in Cuba and elsewhere for a sugar expert to take up the position of manager of the sugar factory to be established in the eastern section of the colony by the Government. The salary offered is £2,000 per annum. The Government is about to appoint a Sugar Board to supervise the running of the factory.

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The quantity of sugar in stock at Cuban ports was only 672,948 tons of April 30 last, compared with 1,097,753 and 1,042,422 tons in 1919 and 1918, respectively. Another million tons are probably stored inland, but the fact remains that, at least half of this season's crop was shipped abroad during the first four months of 1920.

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Plantations in the colony of Barbados are changing hands at record prices. A year ago estates were sold at an average of £100 per acre. Recently one plantation of 658 acres was sold for £120,000, or more than £180 per acre. This is the result of the

scientific methods of cultivation adopted in the colony.

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Rhodesian farmers have been selling their new season's maize at prices ranging from 22s. 6d. to 27s. per bag of 200 lb. The Co-operative Farmers Society, which handles the bulk of the crop, is stated to be guaranteeing its members a minimum of £1 per bag. The crop is expected to be a record for the territory.

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The British Indin Steam Navigation Company has ordered three large motor ships designed to carry 150 passengers in addition to 10,000 tons of cargo. Complete plans and details of these vessels, the first motor liners for passenger traffic, are published in the current issue of the *Motor Ship*.

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The Jamaican Legislature has, by resolution, decided that the preference of 40 per cent on cotton piecegoods imported into the island from the United Kingdom, and 50 per cent on such goods made entirely of cotton grown within the Empire, shall apply to other portions of the Empire.

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Out of the total area of 157,000,000 acres in British East Africa, about 2,500,000 acres are forest reserves. The forest industry there is developing into a very important one, and the Government is now tackling the question of harbour improvements to cope with timber exports.

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The *National Belge* states that a big English company, possessing travel bureau in India, Egypt and America, has bought from the Maritime Society of Bruges Zeebrugge the right to develop the Mole and harbour of Zeebrugge for use in connection with the business of the company.

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The Department of Agriculture in the Phillippines is utilizing the cinema to demonstrate approved methods of cultivation, preparation of seed, use of farm machinery, harvesting and storing crops, and packing and handling where these processes are involved.

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Special buildings are to be constructed, at a cost of £40,000, at Bienfait, Saskatchewan, for the purpose of producing a briquette from low-grade lignite with which will produce as much heat as Pennsylvania anthracite, and will cost less than domestic coal.

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Several paper mills in the Lothians are receiving enormous quantities esparto grass from North Africa and Spain, many shiploads having reached this country recently. It is anticipated that this will ease the prevailing paper shortage in Scotland.

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The Philippine Government has planned to spend 50,000,000 pesos on irrigation proposals for the purpose of increasing rice production to twice its present output, making the islands self-supporting and providing a surplus quantity for export.

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The Norwegian Parliament has passed a bill putting houses on allowance, so that in all flats of ten rooms or more the number of rooms over and above the number of inmates in the house will be let out to people suffering from the present house shortage.

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The Kerensky and Romanoff paper money in circulation amounts approximately to 150,000,000 roubles. This total represents but a portion of the flood of paper currency issued in Russia during the last few years.

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The census estimate of the value of the output of Canadian factories for 1870 was $221,000,000. For 1917, the last year for which figures are available, it was $3,000,000,000, an increase of about 1,400 per cent.

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Much real property of all kinds has recently been purchased in France with foreign capital, especially in the country districts and in the old battle area, where numerous Americans, Swiss, British and Spaniards are now farming.

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The Ford Motor Company contemplates establishing an assembling and distributing plant for the Maritime Provinces in the city of St. John, New Brunswick, and officials of the company are arranging for a suitable building site.

The Georgetown, British Guiana, Chamber of Commerce at a recent meeting decided to communicate with the British Cotton Grower's Association on the possibilities of the cotton industry in British Guiana.

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Only 2 per cent of the population of 400,000,000 in China are able to read. Motion picture shows are now being used for educational purposes. Their popularity is increasing by leaps and bounds.

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The average annual export of cotton from China exceeds the imports by about 600,000 piculs (one picul equals 133⅓ lb.) or about 4 per cent of the conntry's production which totals 15,000,000 piculs.

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A scheme for connecting Nippon, the main island of the Japanese group, with the island of Kyushu by means of a tunnel starting at Shimonoseki has been taken up by the Japanese Government.

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Started for the first time in 1916, rural credit associations in the Philippines numbered 418 at the end of 1919, with a membership of 73,381 and a financial turn over of 1,594,597 pesos.

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Sugar exports from Cuba amounted to 1,897,207 tons during the first four months of 1920, compared with 1,392,952 and 1,133,222 tons in 1919 and in 1918, same period.

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It is announced that the Government of the Union of South Africa intends at an early date to proceed with the electrification of the railway line from Cape Town to Simonstown.

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France continues to suffer acutely from a hortage of food-stuffs, raw materials, machiery for local industries, and many essential rticles of manufacture.

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Owing tothe uncertainty of the coal supply from the United States, the fuel restriction which were in force in Canada during the war have been reimposed

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Lafayette wireless station, near Bordeaux, develops a power double that ever before attempted, and the length of its wave is about half-way round the world.

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A representative of J. and P. Coal Limited, is investigating the possibility of cotton growing in Brazil, particularly Maranhao and Pernambuco.

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A consignment of 100 tons of sunflower seed, grown in Southern Rhodesia, has been shipped to England for conversion into oil and cake.

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During July last 500,004 rupees were coined at Bombay Mint. The total number of rupees coined from April to July was 33,200,065.

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All the Canadian railways have applied to the Railway Commission for authority to raise their freight rates by 30 per cent.

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Cotton-growing is being attempted in the Midlands of Natal, and the prospects of the industry are said to be encouraging.

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Diamonds to the extent of 873,961 carats, valued at £2,661,854, were produced in the Transvaal during the year 1919.

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Tasmanian Civil servants' salaries have been increased by 10 per cent to meet the increased cost of living.

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Porcelain money to replace small paper money is expected shortly to appear in circulation in Germany.

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Fifteen hundred guineas was obtained at the Sydney annual sheep sales for special stud merino ram.

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Measures for the punishment of food speculators have been approved by the Spanish Cabinet.

ECONOMIC NOTES.

INDUSTRIES AND COMMERCE.

Economic Conditions in Germany.

A Report of the Industrial and Commercial Conditions in Germany at the close of last year has been issued as a White Paper (Cmd. 752. Price 4d.) We may consider here the general financial and economic diseases from which a defeated Germany is suffering, and from which for a considerable time that country must continue to suffer. The loss of the war, following upon methods of finance which did not contemplate defeat, but which looked rather to the receipt of indemnities from beaten enemies, destroyed German credit abroad. Raw materials for industry had been used up, and Germany had both lost coal fields and become liable to supply coal to France. In the absence of raw materials and fuel it was not possible to manufacture goods in sufficient quantities to re-establish an export trade balance. Currency was largely inflated, and continued to suffer from further inflation in order to meet expenditure for which taxation supplied no adequate revenue. Superimposed upon these economic consequences of defeat were the financial obligations, undetermined in amount, which Germany had accepted under the Peace Treaty.

CURRENCY INFLATION.

During the summer of last year there was a decline in the paper currency both of State Bank notes and of Loan Bureau notes, but a rapid reaction was witnessed in the autumn, while by the end of December the notes issued showed an increase of over nine thousand million marks in four months. The Report states that the reasons assigned for this enormous increase in paper currency in the second half of the year was, in the first place, the upward movement in prices generally and the consequent greater demand for money; the prices of iron and metal, and the repeated rises in the price of coal, of food, of railway tickets and electricity. Further, the order forcing banks to reveal the holdings of their clients in stocks and shares let to large realisations and the boarding of the money thus realised. Another cause is to be sought in the law concerning the Levy on Capital (Reichsnotopfer). People naturally felt that cash transaction and ready money kept in their own houses were safer from the investigations of the tax-gatherer than any form of investment. The uncontrolled imports into Occupied Territory and the payments for the Armies of occupation were quoted as contributory causes for the inflation of German currency. At the end of 1919 the State and Loan Bureau notes issued amounted to 49 thousand million marks, as compared with 2,406 millions in June, 1914. The note currency had therefore been multiplied by twenty since the middle of 1914.

THE INTERNAL DEBT.

At the end of March, 1915, the German Public Debt amounted to less than 17 thousand million marks. Five years later, at the end of March this year, it was estimated by the Ministry of Finance at 219 thousand millions, an increase of rather more than 200 thousand millions. This debt does not include the liabilities under the note circulation, which have been placed, as above stated, at 49 thousand millions at the end of 1919. Neither does it include any estimate of Germany's liabilities under the Peace Treaty obligations. The Report states that the only positive measures which were taken during 1919 to bring German internal finances into order and to consolidate the floating debt of over 100 milliard marks, which exists in addition to the 90 milliards of War Loan, was the enormous volume of new taxation. The consolidation of the 6 milliards of marks in Belgium and the Premium Loan, which had the same object in view, hardly affected the situation, the first because the amount involved was too small and the second because it was a failure.

NEW TAXATION.

During 1919 the following new taxes and levies were introduced:—

Direct Taxation—

1. Extraordinary War Levy for 1919.
2. War Increment Property Levy for 1919.
3. Great Levy on Capital (spread over 30 years)
4. Death and Legacy Duties.
5. Centralised Income Tax.
6. Special Tax on Revenue from Capital.

Indirect Taxation—

1. Tax on railway tickets and way-bills.
2. Tax on Land Transfer.
3. Rayon Tax (*i.e.*, on land the value of which increases owing to the compulsory razing of fortresses.
4. Stamp Taxes.
5. Tax on Business Turnover.
6. Tobacco Tax.

7. Coal Tax.
8. Spirit Tax.
9. Beer Tax.
10. Wine Tax.
11. Sparking Wine Tax.
12. Vinegar Tax.
13. Mineral Water Tax.
14. Coffee and Tea Tax.
15. Sugar Tax.
16. Taxes on Matches and Lighting Material.
17. Playing Card Tax.
18. Amusements Tax.

The system of taxation imposed for national purposes is being reformed in order to concentrate the levy and control of taxes in the hands of the Central Government. The subordinate Governments and Municipalities were left to invent new taxes in order to make up for the loss of local revenue.

A point to be remembered is that this new taxation, added to that which was imposed during the war, will not be more than sufficient—even if it produces the revenue expected—to meet Germany's internal financial requirements. Her chief difficulties, the restoration of her credit and the rebuilding of an export trade balance, remain unaffected. The immediate obligations arising out of the Peace Treaty were estimated for, but no provision was made in the Budget of 1919-20 for those liabilities which have not yet been explicitly determined by the Allies.

COAL AND TRANSPORT.

Although the production of coal improved in Germany during 1919, it was not possible to accumulate stocks, and transport difficulties caused both the domestic and industrial supplies to be precarious. A few examples are given in the Report, which show to how great an extent industrial recovery is hampered by shortage of fuel. The examples given are those of industries which obtain their raw materials for manufacture within Germany itself.

(a) The Cement Industry consumed 300,000 tons of coal per month before the war; at the time of the greatest demand during the war it received 140,000 to 150,000 tons, and at present it is receiving 60,000 to 70,000 tons. Its production is about 100,000 tons of cement per month now as against requirements amounting to 1,100,000 tons.

(b) The Lime (Kalk) Industry consumed 250.000 tons per month before the war, while now it cannot be allotted more than 70,000 tons, including lignite, in spite of preferential treatment. As the production of this industry must in the first instance be used for *the supply of nitrogen works, for smelting works, and for the chemical industry, the shortage of lime in the building trade and for manure is apparent.*

(c) Before the war there were 18,000 brick kilns in Germany; by the autumn of 1919 only 1,200 to 1,300 were running. It must, however, be remembered that the prewar numbers included many small works.

(d) The Porcelain Industry consumed 60,000 tons of coal a month in 1913, to-day it has an allotment of 34,000 tons, but it actually receives barely 25,000 tons.

The industries quoted all obtain their raw materials in Germany, and three of them are of exceptional national importance in view of the housing question, while the Porcelain Industry is needed to help in the creation of foreign credits.

It is realised that no help can be expected from coal imports, and all efforts are to be directed towards intensive production and improvement of quality, coupled with an increase in the efficiency of transport.

The coal and railway problems are very intimately connected. Without locomotives and trucks coal cannot be moved. The number of trucks requiring repair at the end of 1919 was 75,000 to 80,000, only half of which could be accommodated in the shops, the remainder standing on sidings and unused tracks, where they deteriorate and are stripped by the population. The conditions in the locomotive repair shops were steadily getting worse. The number of locomotives needing repair, but on which work had not been commenced owing to the idleness and indifference of the workmen, had risen from 1,700 during the second half of 1919 to nearly 2,000 by the middle of January, 1920. Matters have now reached such a pitch that the Government has closed some of the most important shops, such as the one at Nied near Frankfort-on-Main, because they did not even cover running expenses and because it was felt that nothing short of this step would have any effect on the stubbornness of the workmen.

SHIPPING.

Before 1st August, 1914, Germany possessed seagoing steamships and sailing vessels of a total gross register tonnage of 5,108,600 tons. After delivering to the Allies all ships over 1,600 tons and half of those between 1,000 and 1,600 tons, she retains a total of 501,910 tons, a tenth of her pre-war tonnage; 25 per cent of this residue consists of tugs, lighters and trawlers. Apart from the difficulties created by the shortage of fuel and material, and by labour troubles which were particularly marked on the

coast, the uncertainty of the interpretation of the peace terms has prevented German shipping companies from developing any great activity, except in the construction of small vessels under 1.000 tons which can be used in the carrying trade in the Baltic, North Sea, and Mediterranean. Under these circumstances the Hamburg America Line and the Norddeutscher Lloyd have been forced to adopt a waiting policy with regard to building, though there can be no doubt that they will come forward with strong programmes when the general industrial and economic situation permits and when they feel secure from interference by the Allies. In the meantime they are endeavouring to regain a partial control over their former fleets by undertaking agencies for such lines as are running the vessels which used to belong to the German companies.

The issue of five million marks of preference shares by the Hamburg America Line was not the result of a need for capital, but was one of the many cases in which the issue of such shares was undertaken to protect a concern against foreign influence. The shares possess multiple voting power (in this instance said to be 30 votes per share) and are allotted to original shareholders only who may not resell them without the consent of the Supervisory Council (Aufsichtsrat). There is, however, another feature of interest connected with this issue of the Hapag, as the five million marks of preference shares were exchanged for a similar amount of preference shares of the Hamburg-South America S. S. Company. Thus each company has the predominant influence in the other, while they mutually protect each other against foreign interference. In August, the Hapag dismissed as from 1st October large numbers of its employees; it continued, however, to pay them to the end of the year. At the beginning of 1920, the Hapag definitely acquired the Levant Line with which it had had a working agreement for many years past. This amalgamation was carried out in order to facilitate the process of reconstruction which, it was considered, would be favoured by the consolidation of German shipping companies.

The Norddeutscher Lloyd, while being in the same position as the Hapag, does not appear to have done more than continue work in those directions where it was possible for it to do so. For the time being too it has not entered into fresh combinations and has contented itself with the arrangement it had made with the Hapag shortly before the war. The Norddeutscher Lloyd state that their "European business," particularly coasting and inland water traffic, was good, and that after the German Admiralty had returned some of the company's ships they were able to extend their towing service in the North Sea and the Baltic in the summer of 1919.

The future of German shipping is universally regarded as full of difficulties. The building of a new merchant fleet will be many times as expensive as formerly for a long time to come; while on the other hand, freights are likely to fall. A great outlay of capital will thus produce steadily declining receipts. The productivity of the German yards, which are the only ones available on account of the exchange question, is unfavourably commented upon, partly on account of disinclination to work amongst the men and partly owing to shortage of coal and material. Further, Germany is obliged to build up to 200,000 tons per annum during five years for the use of the Allies.

GENERAL CONCLUSIONS.

The Report with which we have been dealing is not exhaustive. It treats of the dominant factors in German economics and industries and shows the condition of paralysis to which that country has been reduced by the losses and liabilities of the war. The industrial machine is intact, but the wheels are turning very slowly. Even when the necessary raw materials are obtainable within the country the shortage of fuel and the reluctance of labour to exert itself reduce production to a fraction of what it was before the war. The collapse of credit makes very difficult and costly the purchase from outside Germany of materials for industries dependent upon foreign supplies. The Report sums up the situation as follows:—

Germany has very nearly ceased to be a purchaser owing to the state of her exchanges, and we are presented with the spectacle of this country in urgent need of food and raw material lying impotent, unable either to satisfy her own requirements or to relieve her neighbours of accumulations which are rapidly becoming a burden to them. As Germany cannot buy, so also she cannot produce; she is, therefore, as long as present conditions last, not a serious rival, neither is she able to pay what she owes as reparation.

If she is left to herself, it may be regarded as certain that Germany will be permanently crippled both as consumer and producer; while she would thus disappear as a competitor, she would become a danger spot in the centre of Europe, spreading industrial decay on all sides. There can be no doubt that such an eventuality is undesirable, and the question therefore arises, how it can best be avoided. The answer is summed up in the words "by putting her in a position to produce," but the methods how to put it into practice is fraught with extraordinary difficulties, not only on account of the magnitude of the task itself, but also because Germany is merely one of several countries who need similar aid. Germany is still perfect industrial machine, running at low

speed it is true, but undamaged as yet in its vital parts, and would respond rapidly to any stimulus.

Although tempting, the mere investment of capital in the purchase of factories, etc., in the interior of Germany should not be undertaken without the most careful consideration as to the fuel supply, the labour situation, the burden of taxation, and the probability of restrictive legislation. Most concerns, which are worth buying, have taken precautions to prevent the intrusion of foreign influence, and certainly do not seem inclined to sell voluntary any longer, though there was a tendency to do so in the first uncertainty after the Armistice.

THE MECHANICAL EQUIPMENT OF TOBACCO FACTORIES

A Correspondent writes to the *Near East*:—

After the introduction of tobacco to Europe by Christopher Columbus, smoking in any form remained for a long time a luxury of the rich, and it was not until the last few decades that indulgence in the habit has been within the reach of all. This revolution has been made possible by the introduction of the same factor that has been responsible for most of the developments of the nineteenth century—machinery, which has placed the tobacco industry in the leading position it now occupies. Without the use of machinery it is no exaggeration to say that four-fifths of the people addicted to the "weed" in one form or another, would have to go without, as their requirements could only be satisfied by armies of workpeople.

The remarkable strides made have been entirely due to the invention and perfection of automatic machinery, which can justly be regarded as the product of marvellous mechanical ingenuity, for in spite of the varied and delicate operations necessarily involved in the making of a cigar or cigarette, the terms "intricate" or "complicated" could hardly be justifiably applied to the machine which automatically produces highly finished cigarettes from a reel of cigarette paper and bulk tobacco at a rate of 36,000 per hour, or that which turns out 480 cigars an hour from tobacco leaves.

It is generally recognised that, in view of the highly sensitive nature of the tobacco plant, the less the leaves come in contact with human hands the better, in addition to which, of course, there is the question of purity (a point to which responsible tobacco manufacturers attach the utmost importance), and it speaks volumes for the high degree of perfection attained in present-day tobacco machinery that "man-handling" is practically non-existent, and every precaution is taken to avoid every risk of tobacco being contaminated and tainted by contact with oil from bearings, etc., or other extraneous matters.

The tobacco industry has now been brought to a fine art—or perhaps it would be more appropriate to term it a science, for certainly no known scientific subject needs more consideration and care than the rearing of the tobacco plant, the lengthy preparations for its ultimate purpose and subsequent manufacture into the finished article ready for the consumer. A period of about five years elapses between the planting of the seed and the manufacture of the product into cigarettes, etc., and during all this time unremitting care is necessary to retain and improve the natural fragrance of the leaves and bring them into proper condition for smoking, this end being assisted by periodical treatment in one type of machine or another.

It is the final process, no doubt, that is of most interest to smokers—the actual production of cigarettes. The various operations are surprisingly simple. The tobacco, already "shredded," is put into a container, technically termed a "hopper," placed above the machine, whence internal rollers regulate the "feed" to a smaller "hopper" situated below, and from which the required quantity of tobacco falls upon, and is carried along by the cigarette paper. Passing along both paper and tobacco enter the larger end of an elongated cone-shaped tube, and as it proceeds through one side of the paper is wrapped round the tobacco leaving the other edge projecting upwards for treatment by the "automatic paster," which deposits a very small quantity of special paste. Continuing further this pasted edge encounters a shaped block, which wraps it round the cigarettes. The seam is then sealed and dried by means of an electric or mechanical drying device. There is then a long paper-enveloped tobacco "rod," and the only remaining operation is the cutting off of the cigarettes to the predetermined length. This is performed by a high-speed circular knife, ground to razor-edge keenness, and operated vertically and horizontally by cams and levers in unison with the rate of egress of the "rod." The finished cigarettes are then ejected into the "catcher" at the rate of ten per second.

A highly interesting feature of a machine such as that described is the printing device which stamps the name or trade-mark (or both), invariably found on cigarettes of every type and quality, often in two colours. This forms an integral part of the machine,

and consists of small dies located on rollers adjusted according to the length of the cigarette being made, and where a two-colour design is to be printed, in register one with the other. The cigarette paper strip passses under these dies in its passage from the roll to the "hopper." Another adjunct frequently encountered in this highly developed machine is an automatic device for affixing gold, cork, or paraffin tips.

MADRAS INDUSTRIAL SCHOLARSHIPS.

The Madras Publicity Bureau in a note says:—

At the instance of the Director of Industries the Government have approved a revised scheme for the award of industrial scholarships. The principal features of the revised scheme are as follows:—

Industrial Scholarships will in future be awarded by the Director of Industries to pupils learning a trade or profession in recognized industrial schools or to selected apprentices (boys or girls) serving properly arranged apprenticeships for a specified term of training in workshops or mills where provision is made for the apprentices receiving class instruction in working hours for not less than 4 hours per week in subjects calculated to improve their value as artisans or operatives on completion of their training. The aim of these scholarships is to encourage deserving apprentices and pupils to complete their whole apprenticeship or period of training at one institution or workshop and so to some extent to check the present tendency of apprentices to move from workshop to workshop in search of a few annas increase in wages to the detriment of their training and the annoyance of their employers.

2. For the present, sixty scholarships will be awarded per annum tenable in approved schools or workshops or mills for a period of 5 years or such shorter term of apprenticeship as may be usual in the particular trade or occupation.

The scholarships will be of the value of

Rs. 1-8-0	per month	during the	1st year	of training.
Rs. 2-0-0	do	do	2nd year	do
Rs. 3-0-0	do	do	3rd year	do
Rs. 5-0-0	do	do	4th year	do
Rs. 7-8-0	do	do	5th year	do

A bonus equivalent to 2 months average scholarship will be granted for each year of training to such apprentices as satisfactorily complete the whole period of training agreed on at the commencement of the scholarship.

The conditions of award shall be as follows:—

1. All scholarship holders shall be on probation for six months, after which the scholarship will be confirmed or withdrawn after consideration of a report from the employer or teacher regarding the scholar's work. Scholarships will ordinarly be granted to members of the artisan castes or to others whose families are already in the trade.
2. No scholarship will be granted to candidates who are over 17 years of age at the commencement of their apprenticeships, but in the case of Mohamedan candidates, the age limit may be raised by 2 years.
3. The general educational attainments of candidates should be such as would enable them to profit by the training provided. Ordinarly a Standard V pass in the Primary grade will be regarded as the absolute minimum, but the nature of the trade to be followed, the pecuniary circumstances of the candidate, and his general fitness for the work will be taken into account in deciding whether a candidate is qualified for the scholarship.
4. The candidate and his guardians must enter into an agreement with the employer that he will faithfully fulfil the conditions of apprenticeship, and unless prevented by sickness or other circumstances beyond his control, serve the full term of apprenticeship that may be agreed on.

GENERAL REGULATIONS.

3. Applications for scholarships should be submitted by the head of the institution in which a candidate is studying or intends to study or by the candidate's employer or his manager on or before the 15th April in each year. Applications should be accompanied by a 'clearance' certificate from the school last attended and by such other particulars as are likely to assist the Director in coming to a decision, and should be made on forms which may be obtained from his office.

4. The names of selected candidates will be notified by the Director of Industries in the Fort St. George Gazette. Each scholarship will come into force on the 1st July.

5. Government trust that employers of labour will co-operate with Government in this scheme to the extent of conducting recognized classes in their works during working hours or allow their apprentices time off duty to attend classes in the Madras Trades School or any other place where suitable training is provided.

6. Works schools and classes will be eligible for recognition and for a Government grant provided they are conducted to the satisfaction of the Director of Industries, irrespective of the number of scholarship-holders in attendance.

CO-OPERATIVE FINANCE.

The following has been sent to us by the Madras Publicity Bureau:—

The ordinary financing arrangements of the co-operative banks in the Madras Presidency are described below :—A primary co-operative society on unlimited liability basis is usually empowered to borrow money to the extent of one-eighth of the net assets of the members of such society while a primary society on limited liability basis is empowered to borrow to the extent of 5 to 8 times the paid up share capital of the society. The borrowing may be in the shape of local deposits or as loans from central banks. As deposits do not come into primary societies as freely as one would wish, central banks were started with the object of raising the credit required by the primary societies in the market. These central banks are limited liability institutions whose sole object is to finance co-operative societies. These institutions get money by deposits tenable for a period of one to three years and they are lending the money to co-operative societies ranging from a period of one or to a period of 10 years. These arrangements can be satisfactorily kept up only when there is a free flow of deposits far in excess of the outflow. To obviate the difficulties which the central banks may feel in returning deposits on the due dates of maturity, the help of the Madras Bank was availed of and it has been generous enough to give overdrafts to well established central banks with proper management and with a back ground of a large amount of paid up share capital.

The Madras Provincial Co-operative Bank is a federation of various central banks in the Presidency and it is intended to connect the co-operative movement with the larger money market in the Presidency town. In view of helping the Provincial Bank to take deposits for shorter periods and lending them to district banks for such longer periods, the Madras Bank has been generous enough to allot a very large amount as overdraft to be drawn upon by the Provincial Banks in times of emergency. Besides, these institutions which conduct banking by deposits have been allowed the privilege of keeping fluid resources in the shape of an undrawn overdraft with the Bank of Madras. The Madras Bank has allowed overdrafts to various district banks in the Presidency and the Madras Provincial Bank as shown in the statement appended. Thus it will be seen that the co-operative movement and the financing banks have benefited considerably by the arrangement of an overdraft with the Madras Bank. In fact the period of financial stringency experienced during the months of January to June 1920 was surmounted by the help of this overdraft.

Name of Bank	Amount of overdraft allowed
Madras Central Urban Bank ...	12 lakhs.
Salem District Bank	$1\frac{1}{2}$ lakhs.
Christian Central Bank ...	25,000.
Kistna District Bank	1 lakh.
North Arcot District Banking Union	$2\frac{1}{2}$ lakhs.
Nellore District Banking Union...	10,000.
Anantapur District Banking Union	50,000.
Malabar District Banking Union...	50,000.
Vizagapatam District Banking Union	30,000.
Chingleput District Banking Union	1 lakh.
Madura Ramnad District Banking Union	1 lakh,
Tanjore District Central Co-operative Bank	1 lakh.
Viziavad District Central Co-operative Banking Union	10,000.
Ellore District Central Co-operative Banking Union	10,000.
South Arcot District Co-operative Banking Union	30,000.
Trichinopoly District Urban Bank.	2 lakhs.
Coimbatore do ...	2 lakhs.

CORRESPONDENCE.

To

The Editor,

Mysore Economic Journal, Bangalore,

The Teaching of Religion and Morals in Schools.

Sir,—For some time past a systematic agitation has been kept up in the State for the teaching of Religion and Morals in schools and the question was also discussed in the Education Committee of the Mysore Economic Conference and as a result of it a "Note on the teaching of Religion and Morals in Schools" was published by that august body as a guide for the introduction of the subject in all the schools of the State. They generally believe and unhesitatingly assert that a good deal can be accomplished if this is included as a subject in the curricula which is already top-heavy. Before pronouncing any decision as to the advisibility or otherwise of the teaching of Religion, let us analyse and see what

relation Religion in its accepted Vedic sense bears to morality and morality to religion;—the conditions, environments and materials available with which religious instructions can be imparted.

The sources of Hindu Religion are the Vedas. "It is pre-eminently the worship of Nature in its most imposing and sublime aspects." Vedic Religion "is one common to the highest thinking that the supreme truth of all existence is a Being or an existence beyond mental and physical appearances, a Spirit, a Self, an Infinite, an Eternal, a one transcendent, universal, original and sempiternal Divinity and that Soul, Nature and Life are only a manifestation or phenomenon of this self-aware Eternity." Further it is that which sees "the Supreme altogether and *in all ways and grow to be at one with* Him, that is the eternal religion." "The Vedic religion is the knowledge, the recognition of the eternal principles of being, of God, of spirit and matter and their relation to one another as revealed to them in the Vedas."

Can such an intricate, deep and subtle subject as the Hindu Religion be entrusted to men of mediocre attainments with scanty materials? It would be like a layman administering medicine to an invalid without diagonising the disease for which he wants to administer the medicine. The consequence, if so administered, needs no mention. The patient would do well without it. Further the teaching of religion as suggested in the "Note on the teaching of religion and morals in schools" issued by the Education Committee of the Economic Conference is objectionable and unprecedented. It lays down that "there should be in the class room no regular teaching or any discussion, but there should be on the part of the teacher only reading, explaining and illustrating such stories and incidents from sacred books as are acceptable to all the communities and are likely to find reverential hearing on the part of the students." Is not the spirit of enquiry in a student, healthy and creative? Was not Tharka Sastra a favourite study with our ancestors? Why then should we deny this privilege to the present day youth? We cannot and should not thrust upon the unwilling youth the yoke of this unproductive and undiscernible burden which would crush him down. Shatter the fetters and restore freedom; nourish the youth and behold the Perfect Man.

Religion should be lived in and realised but cannot be taught in set lessons as some seem to think. The religious experience, the community of a Soul with God, *arises out of the moral experience, the character*, developed in relation with the world. Morality is indispensable *to religion, religion is the natural* outcome of morality and religon is not, as it is said in the Note, "the basis of a good moral character and high moral ideas." Religion—the realization of the self in man, the fusion or unity of this self in man, *the fusion or unity of this self with the* Supreme, is not and cannot be the basis but it is the Goal—the Eternity. Morality—true pre-eminence in morals, is the basis, the foundation that could stand the strain of life's struggle for a structural construction towards self-realization of the Atman in man. Two house-hold terms of daily use "Being religious" and "*moulding character*" *strengthen my argu*ment further that religion should be lived in and character moulded or cultivated.

To quote here a passage from *Hindu Superiority* by Har Bilas Sarda may not be out of place. "True religion which is only another name for Gyana or *true knowledge, is a necessary result of preeminence in morals*, philosophy, literature, science and general culture." This then settles the question that morality is all prominent, necessary and the very lever of religion. It is the seed from which grows religious experience.

It is confusion and superstition to say that a purely moral instruction is impossible on the ground that "the peculiar social and *religious conditions of the* Hindus make it really difficult to teach morality *without a basis of religion.*" "*Spiritual truth*," says H. B. Sarda, "has been in its whole largeness and living sincerity the property only of a few thinkers, mystics or exceptionally gifted spiritual nature, while the mass of men have had no perception of it, but lived only in the lower sectarian side of religion, inferior ideas of the Deity or in the outward aspects of life." He adds, "nothing can be more untrue than to say that the general religious mind of India has not at all grasped the highest spiritual or metaphysical truths of the Indian religion and has lived always *in the externals only of rite and* creed and shibboleth." We may talk piously and learnedly and use high *sounding words* which would bubble with meaning, we may argue and debate with all the zeal of a scholar, but knowledge of God arises *only* from purity of heart and no amount of learning would bring blessing to him who is difficient in good conduct. Knowledge of God" is an experience which is superinduced on pure heart—the virtuous man alone can know God."

True religion *is for the higher souls—the mystics* and the saints. And it is they that are fit to teach. In the absence of these it is advisible to leave religion alone, for, to teach religion in its true sense is beyond reach so much so that we are unable to square up our necessity by manufacturing a stream *of sannyasins or a set of Ideal men who will "teach to keep the reality vivid and resist the deadening* weight of form and ceremony." And further, it is undesirable to stuff young minds with "the lower

sectarian side of religion, inferior aspects of the Deity or the outward aspect of life." Let us leave this alone to be blossomed in the later life of the youth with the growth of virtues in him and look to the cultivation of virtues which would fit him, when matured, to know himself.

Moral Education, as in Japan, of a purely secular character which, would have "much of the practical Code, kept clean and free from the admixture of abstruse metaphysics or the mystic dogmas of contentious creeds," may conveniently be introduced in the schools of our State. Religious instruction can never be possible to give without prejudice to one's faith and except of a sectarian type. If introduced, it would seriously jeopardise the whole system. This threat is not without its grounds. The experience of the State in this direction would justify my threat. What then does the State's past 11 years of experience show? "The experience of the past 11 years indicates that the scheme especially as regards religious instruction, has not been a success." Let us enquire a little more as to how this scheme fared with the teachers and the students. The note runs thus: "Teachers have evinced little interest in the teaching of these subjects and it has often been that students, especially in High Schools, *are trained to scoff at religion rather than look up to* it in reverence." And let us also see what the conclusions arrived at by that responsible body by their experiment of the scheme. They deploringly state *that "Even moral lessons which would have been* a fair success if they had been taught on a purely secular basis as in Japan, seem to have suffered by raising controversial religious points in class room." This then is our experience. Let us now go out and look into the teaching of religion in other countries, "In England, the united Biblical teaching in undenominational schools does not seem to be a success, as this united teaching would have to serve the greatest common measure of a great variety of beliefs and as it can never embrace the whole of ideal religious education of a child." "In Italy the device adopted is to provide religious instruction only to those pupils whose parents desire it." To be more precise, "in Western countries social service is almost assuming the place of religion." When countries like England, Japan, Italy, etc., with the special advantage of being a homogeneous whole in religion, language and nationality find it difficult to successfully teach religion in schools, just imagine, how much more so difficult it would be for us to introduce religious education withour diverse religious beliefs, etc.

I should like to point out here why such disastrous results were the consequence of the introduction of religious education in the schools of the State. "A spirit of reverence and devotion" is only possible and productive in a healthy ideal atmosphere. Moreover, the most essential things of all lie in the personality of the teacher—whether he who teaches be parent or teacher—in sympathy, in moral insight, in candour of heart, in self-discipline, in consistency of conduct and largely in the corporate life of the School.

Nothing appeals to me most at this juncture as the best suited than to copy the wise policy of Japan by forbidding religious instructiou in public schools and introducing moral education which would encourage and promote the practice of virtues. Civics and a well set out "Youths' Code of Honour"—a wide spread Scout Movement would go a long way to inculcate the youths of the country to live a life which will contribute to the common good of the humanity at large.

A. R. JAYARAM,
Sivan Chetty Garden, Bangalore.

INDIAN ECONOMIC ASSOCIATION.

Sir,—Arrangements are already in progress for the Fourth Annual Conference of the Indian Economic Association which is to be held in Allahabad *during the four days from December 29th next to* January 1st. The University of Allahabad has very kindly offered the use of the Senate Hall and Lecture Rooms for the meetings. The spacious compound of the University with its beautiful trees *will form the pleasantest surroundings for the meetings* of the Conference.

A Reception Committee is to be formed at an early date and convenient arrangements will be made for members who attend the Conference. Excursions will be arranged to local factories, typical villages, and to places of interest like the Fort.

The subjects on which Papers are being invited to be read and discussed at the Conference are the following:—

(1) Finance, Banking Exchange and Prices; (2) Labour questions; (3) The Improvement of the Teaching and Study of Economics in India; (4) Rural Economics: especially rents; the economic status of land revenue; and the relation of rural indebtedness to prices.

Persons desiring to become members of the Association may communicate with the Joint Secretary, Professor J. C. Coyajee, Presidency College, Calcutta, or with Professor H. Stanley Jevons, Honorary Local Secretary, The University, Allahabad. The annual subscription is Rs. 12. Local residents and students may be admitted as Associates on payment of Rs. 6 to the Honorary Local Secretary. They will be entitled to receive the printed volume of Proceedings of the Conference.

H. S. JEVONS,
Hon. Local Secretary.

16 Thornhill Road,
Allahabad.
17th August 1920.

BOOKS IN BRIEF.

A History of the Indian National Movement—*By Sir Verney Lovett K.C.S.I. Late I.C.S. Published by John Murray, London.*

We are rather disappointed with this book, good as it is in some respects. Its tittle expected us to find in it traced the etiology of the National movement in India. It, however, has in fact a much restricted scope. It does not do more than chronicle the superficial growth of the movement. But we have no cause to complain. Sir Verney disarms criticism when he says:—"Throughout I have felt the extreme difficulty in appraising and setting forth fairly the ideals and mental processes of men not of my own race." The book is accordingly one made up largely of extracts from the speeches and writings of Nationalist Indian politicians and is, in so far as it is so, a valuable hand-book of their thoughts and feelings. Into the topics dealt with in the book, we feel we have only a few words to say. The Economic stress in India, its contribution to the origin and growth of nationalism and the need there is to give particular attention to it is the great desideratum of to-day. This we find not adequately or directly treated of by Sir Verney. This, on analysis, will be found to be at the root of much of the politics of India. The book lacks an Index badly and we shall be glad to see one given to it when a second edition is called for. Another suggestion we would hazard. Sir Verney would do well when he revises his book for the next edition to get a chapter included in it by a known Nationalist of standing and status giving an outline of his position in the politics of the land.

The New Economic Menace to India—*By Bipin Chandra Pal—Published by Messrs. Ganesh & Co., Madras.*

This is a counterblast as it were to Sir Verney Lovett's book we have reviewed above. We do not agree with Mr. Pal in all that he writes or says but he is undoubtedly on firm ground when he rests his Nationalism on the Economic issue. Sir Verney, would do well to give this book his attention. Let him read what this protagonist of Nationalism says generally and particularly on pages on pp. 220 and 224 and he will see how his presentment of the Nationalistic case is weak. This, however, is only by the way and we have only space here to add that Mr. Pal's views are put forward in his usual trenchant style and will doubtless attract much attention. Though it comes easy to a publicist like him to cast his book in the controversial style, it is always a disadvantage to have it so put for another's dispassionate consideration. Mr. Pal's constructive portion is in the last pages of the book to which we invite attention.

Value for Money—*By W. Schooling, C.B.E. Published by Sir Isaac Pitman & Sons, London.*

This is a suggestive little book on the influence of wise spending on national prosperity. Mr. Schooling has the following tag taken from Plato on the title page of this book:—"Each of us is not put into the world for himself alone: at the call of the father land it is impossible not to follow" The book is devoted to the work of the National saving movement, with which Mr. Schooling is closely connected. A movement like this ought to be initiated in this country, for the waste we indulge in is something appalling. To those interested in the subject, a better book cannot be suggested. We wish some public spirited people took up this work in earnest.

Historical Sketch of the State Ownership of Railways.—*By W. M. Acworth. Published by Mr. John Murray, London, Price 3sh. 6d. net.*

This book, written by so competent an authority on railway Economics and railway systems of England as Mr. Acworth is, is sure to find many readers in India where a systematic agitation has been going on for some time in regard to the State taking over the management of railways. Mr. Acworth summarises in a brief space the history of State ownership in most western countries—India we do not see even mentioned—and compares the efficiency of private and public management between France and Prussia and as between Australia and Texas. He shows that in democratic states, political influences have always interfered with business management. Following Mr. Justice Sankey's scheme for the management of the coal mines, he suggests the possibility of management, not by the people, but for the people. It is here that the constructive hand is disclosed by Mr. Acworth. The suggestion put forward by him is one well worth consideration even in the country where the case for State management though clear is not likely to be won easily. A compromise of the kind seems to stand a better chance of success. The book wants an index, and we should be glad to see one supplied when a new edition is called for.

ACKNOWLEDGMENTS.

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